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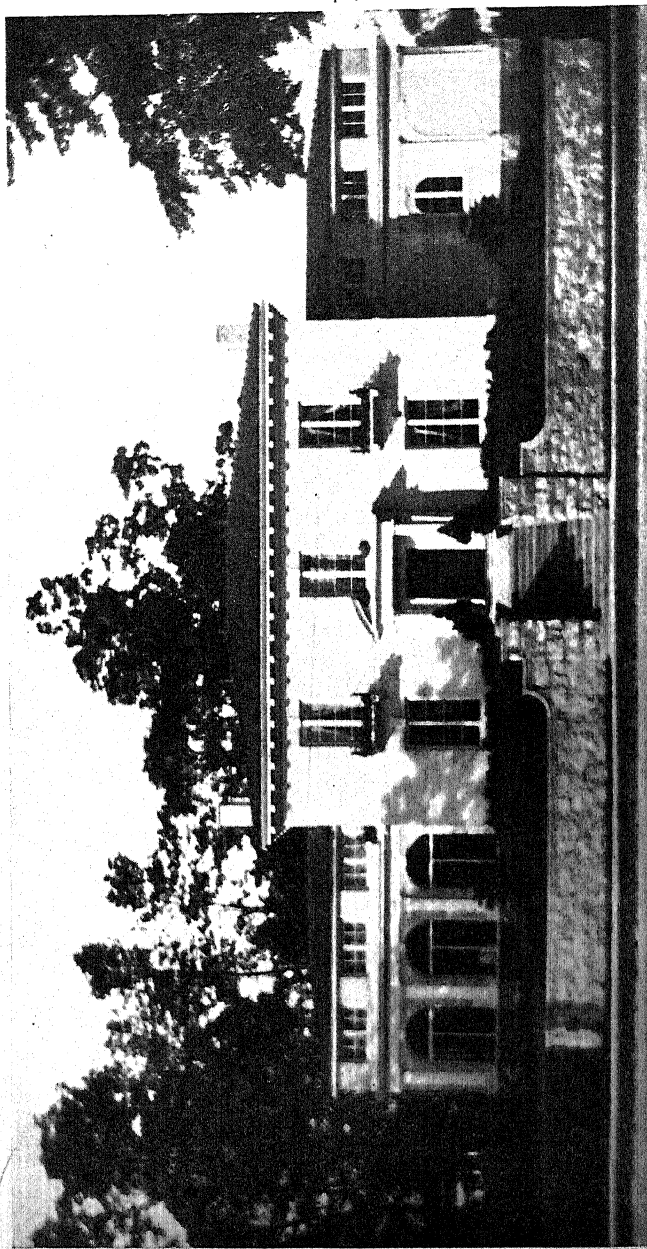
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The author's former home, built in 1904, lived in four years and then sold at a handsome profit (see page 134). It was his first job, in which he was his own client, architect, draughtsman, specification writer, building superintendent, secretary, office boy and telephone girl. A pleasant time was had by all.

ECONOMY IN HOME BUILDING

WITH

A CONSIDERATION OF THE PART
PLAYED BY THE ARCHITECT

BY OSWALD C. HERING, A.I.A.

AUTHOR OF "CONCRETE AND STUCCO HOUSES," ETC.

WITH A FOREWORD BY
ROYAL CORTISSOZ

ROBERT M. McBRIDE & COMPANY
New York : : : : 1924

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To
J. D. B.

*"Th' thing we don't like about a free country is that
anybuddy kin go int'a neighborhood an' build seven
or eight little houses all jest alike."*

KIN HUBBARD.

FOREWORD

Strong confirmation of the validity of Mr. Hering's arguments in this book seems to me to lie in the facts of the last thirty or forty years that are pertinent to the subject. Architecture in this country has made a greater advance in that period than any other of the arts. Why? Because it is in the field of architecture that the American people have most sympathetically met the artist halfway, seeking out competent men and trusting to their ability and taste. The architect has not shared the studio isolation which so frequently afflicts the painter. On the contrary, he has played an active part in the community. Obviously this is in the very nature of things, but the distinctive point as regards the period to which I have referred has been a new spirit of collaboration between client and architect, the recognition by the former that practical problems are best solved with the aid of artistic experience and inspiration.

"Inspiration" may seem a dubious force to invoke when you are tackling some utterly practical phase of the campaign involved in the building of a house, but it takes on a more encouraging aspect when you

FOREWORD

recollect that it means, among other things, a kind of sublime common sense. I have often seen the operation of this solvent in the course of that acquaintance which good fortune has given me with some of the leading American architects of our time. The labors of men like Charles F. McKim, Stanford White, Henry Bacon and Charles A. Platt have been both in the service of beauty and in that of American life. Their function has been constructive in the profoundest sense of the word. They have builded well because they have builded "from the center," responding to conditions.

It is this conception of the architect's opportunity and duty that makes Mr. Hering's book of interest to a critic of architecture. He drives at the relation of the architect to fundamental things, advocates the creation of beautiful buildings through faithful interpretation of what is necessary to the client's purpose. It is his principle, too, to build from the center, and I think his book is well aimed to further that idea. In pleading for better buildings all the time he shows how they can the more swiftly be secured, through the promotion of a clearer understanding between the artist and the layman on the basis of beauty plus common sense.

ROYAL CORTISSOZ.

June 30th, 1924.

INTRODUCTION

THIS book is written with the purpose of telling the home builder and the inexperienced young architect how attractive and economical houses may be designed and built. The principles set forth are applicable to buildings both large and small, new and old, which are used wholly, or in part, for domestic purposes. It is a summary of the experiences of the author in the practice of the profession of architecture during a period of twenty-five years, in the course of which he has observed, and here sets down, a number of truths, as well as other matters that may be grouped under the general head of "fiction," in connection with owners, promoters, realtors, contractors and architects, in the coöperative work of planning and building the home.

As every building operation has its own peculiarities, no hard and fast rules or stereotyped plans are of value, except as a general guide; but it is hoped that the reader may gather enough reliable information from the text and pictures that follow to enable him to embark upon the adventure of home building with a reasonable assurance of pleasure and satisfaction.

INTRODUCTION

The author wishes to thank the architects who have so generously contributed illustrations of their works and to acknowledge that he has occasionally cribbed from articles written by O. C. Hering which have appeared from time to time in *Country Life*, *The Architectural Forum*, *House and Garden* and *The American Architect* and *The Architectural Review*. Other sources of enlightenment have been acknowledged in the text.

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ECONOMY IN HOME BUILDING

THE ARCHITECT INVITES YOUR CONFIDENCE

WHEN I was a schoolboy there were two subjects in the curriculum that filled me with terror. One was "Declamation" and the other "Definitions." On the days scheduled for recitations in these studies, I was often so genuinely ill that my mother did not have to leash her love and sympathy while penning an excuse to the teacher for my absence. To be required to stand up on a platform, before my schoolmates and teachers, and make "Friends, Romans, countrymen" was, for me, a form of torture that I would gladly have swapped for the red-hot iron of the Inquisition. And when asked to define such words as "farinaceous" and "gangrene" I'd break out into a cold sweat.

But strangely enough, in later years, I delighted in playing the leading rôle in a Pinero comedy, and I developed a positive passion for accuracy in description. Not that I became adept at either, but my

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earlier fear changed to pleasure and with it came a tardy recognition of the importance of cultivating coolness and self-control when called upon to face an audience, and clearness in diction when engaged in writing. As time goes on it seems to me that many of the troubles in life are caused by a misunderstanding of the exact meaning of words.

To comprehend the subject matter of this book, the reader should have a clear conception of the meaning of the word "economy." According to the dictionaries, economy is the management of affairs without loss or waste. Economy avoids all extravagances and applies money to the best advantages. Therein it differs from its near relatives, *frugality*—which cuts off all indulgences and proceeds on a system of saving—and *parsimony*—which involves a meanness of spirit and a sordid mode of living. In other words economy is a virtue, frugality is a questionable caution, and parsimony is an out and out vice.

Economy in home building involves a thorough knowledge of design and construction. This knowledge is preëminently held by the architect. He it is who, after years of study, training and practice, discovers the best methods of building. Assuming that he has made the most of his opportunities, he becomes a valuable and important person in the work

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of building the home. Therefore, it behooves the prospective "owner," before engaging in a building project, to learn first of all something about the qualifications of the man who is such a necessary factor in its successful accomplishment. For home building is an adventure which, as a rule, involves a comparatively large amount of money, a sum generally more than the owner himself possesses. The building of houses is often made possible only with the help of a loan and the owner obligates himself to repay this loan by signing a bond and mortgage. Consequently, if the house is a failure the financial loss to the owner is a severe one, and a broken heart or two often completes the picture of disappointment and despair.

Who, then, is the architect? What is his function and where does he fit into the business of building? Again a subject of definition. The American Institute of Architects has defined him and his work as follows:

"The practice of architecture is a profession. He who engages in a profession implies thereby that he professes attainments in special knowledge, and that these attainments will be given practical application to the affairs of others, *in their interest and for their benefit*.

"A profession, then, is a service, primarily a per-

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sonal service, in the performance of which he who serves assumes toward those served obligations growing out of, and consequent upon, his claims to special attainments.

“The architect’s service, the only thing he has to sell, is his professed creative talent in design, his professed knowledge of materials and methods of construction and his professed ability to employ materials and methods safely, wisely and economically in translating design into structure, for and in the interest of his client.

“The architect has no personal pecuniary interest in the materials and applications he employs in the execution of his commissions. He may not speculate with his client’s money; neither may he take chances. The architect is a trustee.

“Fully to discharge the trust reposed in and accepted by him, the architect ought to know, and in theory, at least, may be expected to know, in addition to the fundamentals of good design, how to predetermine the use, performance, and measure the suitability, of a multitude of products offered for a thousand purposes. Essential as this knowledge is to safe and serviceable construction, it is equally essential to good design, for design must be conceived in terms of materials and their adaptability. Irrespective of period or style, architecture, fundamen-

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tally, is stone, or brick, or wood, or concrete or something else."

In order to execute works of domestic architecture, in a manner creditable both to the owner and the designer, it is particularly necessary that the architect should become reasonably familiar with the personality of the people who are to live in the house he designs for them. For, if his attainments are to be "given practical application to their affairs, in their interest and for their benefit," he must get to know them well enough to be able to surround them with a fitting environment, and provide them, wherever possible, with such accessories as may contribute to their comfort and happiness.

Therein lies his justification for courting a close acquaintance with his client and inviting his confidence. The architect of standing should, therefore, be primarily a gentleman of intelligence and education, having the breeding, tact and honesty that this implies. Confusion occurs and ill feeling is often engendered when the client loses sight of these qualifications in the man he has engaged as a professional adviser. In this respect the client's ignorance sometimes brings about an amusing situation. I recall one instance in which I was deprived, at the eleventh hour, of the joy of dining in the servants' hall of a country house. I had been asked by the owner, a

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nouveau riche, to make an examination for the purpose of remedying certain structural defects.

The dinner hour arrived and at his direction I was being shown the way to the servants' quarters, when the butler "spoiled the party" by informing his master that architects were supposed to be house-broken and were customarily received as guests.

If he is a member of the American Institute of Architects he has subscribed to a code of ethics that demands the highest and most honorable type of service. His experience teaches him what is generally best and safest and what, in the end, will give his client the greatest return on the investment, whether in money or in pleasure. Each should, therefore, invite the confidence and trust of the other, for a successful solution of the house-building problem hinges above all upon mutual respect and sincerity. The architect wants to make or maintain a good reputation. He desires to create a building that will do him credit, but he should not require the layman to sacrifice himself upon the altar of architecture. The owner wants a comfortable and attractive home that represents to him his money's worth. But while he pays the bills, and so claims the right to have what he wants and can purchase, he should lend an ear to the counsel of experience and taste.

In selecting an architect the client is very apt

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to be influenced by the suggestion of a friend, but without any further guarantee of the architect's ability than this, he might as well take a flyer in Wall Street and buy the first stock that catches the eye. A safer course to follow would be to send the architect's name and address to the Institute and ask for his professional standing. If this is satisfactory the owner should then call upon the architect and look over his work. No obligation is incurred on either side so far, and few architects will begrudge an interview, particularly if a letter of introduction, or other evidence, is presented to show the caller's sincerity. If a good impression is received the architect may properly be asked for more detailed references, and if he is young and inexperienced he should be willing to divide the honors with an associate of proved ability.

After a choice has been made, the architect and client should have a heart-to-heart conference. A successful solution of a problem in domestic architecture is only possible when the architect wins his client's confidence. If the client will acknowledge that he knows but little about the details of designing and building, he should be encouraged to disclose his weakness and his strength. Unless the architect touches the secret spring to the owner's personality, releasing the "atmosphere" that must surround and

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specifications after the contract has been signed and the work begun is a frequent occurrence. If the owner hasn't the moral courage to resist the temptation to make changes, it would be profitable for him to sign the contract, go to Europe and not return until the house is completed. The saving thus incurred will more than pay for his trip.

Architects usually have an "extra order book" containing stubs and certificates in which they write an order for an extra in duplicate, sending one to the contractor and the other to the owner for his files. I have the stubs of such a book showing the issuance of one hundred extra orders between 1911 and 1923—a period of twelve years. Not one of these orders, however, was for work or material that was essential or due to forgetfulness in not incorporating them in the original plans and specifications. They were all for work and material desired by the owner after the building was begun, due to his enthusiasm and a desire for something more or better. I make a practice, in preparing my contract with the owner for professional services, of stating therein that the owner is not obligated to pay me a fee upon any *necessary* extras. This removes any suspicion in the owner's mind that the architect purposely adds to the cost of the building in order that his fee may be proportionately increased. He should be paid the

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regular fee, of course, upon all extras under the head of "legitimate," described above.

I have never known of a house that was completed without some modification of the original scheme. The records in my office show further that only a few have been completed within the original contract price. But while the plans of all have undergone some change, in several cases allowances were secured from the contractors sufficient to offset the cost of the changes. For example, in one instance I had specified that the walls of the principal bathroom were to be tiled to the ceiling. As the work upon the house progressed, the owner decided that he preferred to have oak rather than yellow pine for the floor of his bedroom. Ordinarily this would have been an extra, as oak is the more expensive wood. But as he was satisfied to have a tile wainscot in his bathroom, in place of tile walls, the allowance thus secured more than paid for the oak floor. In drawing plans and writing specifications, it is better to call for a bit more than for too little. As every architect knows, the cause of extras is almost invariably the inability of the owner to comprehend from the drawings and specifications exactly what he is going to obtain. Almost every house owner is skeptical at the start and desires to spend as little money as possible, and his eye, not being as adept and prac-

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ticed as the architect's in picturing in advance the finished product, one of two things is bound to happen. Either he is disappointed with the result and finds it unlike what he had pictured, or he is so pleased at the development, and finds that his house is going to be so much more attractive than he had hoped, that his skepticism vanishes into thin air and he is everywhere tempted to expand his ideas and substitute more costly material and workmanship.

A comely and clever woman accentuates her loveliness by dressing her hair and draping her figure in a manner that becomes her individual style, and she is seen to the best advantage in surroundings reflecting the chief attractions of her personality. Similarly, the beauty of an architectural composition is invariably enhanced by the propriety of its environment and its fullest expression is often acquired only through a becoming dress of foliage and flowers. To the "atmosphere" surrounding any object is largely due the charm of the impressions received of the object itself. A painting or a piece of sculpture may be an admirable work of art, but the full force of its beauty will only be felt in an appropriate situation.

The Venus de Milo dwells in chaste and solitary state in her private apartment in the Louvre that her classic loveliness may be viewed with undivided

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attention. In the Rijks Museum, in Amsterdam, an entire wall is allotted to each of the three great Rembrandts; the light is thrown upon the canvases in such a manner that none competes with the other, and the observer's attention is at once fixed and held spellbound by the genius of the Dutch master.

Too often is the house considered a collection of rooms, and its disposition governed by no other consideration than haphazard fancy. The comfort and convenience as well as the charm of one's home depend largely upon the plan and the proper relation it holds to the site. The architect is frequently asked to design a house for a plot of ground he has never seen. When a visit to the proposed site is impossible, photographs of the environment and a detailed description of the character of the land is essential, if justice is to be done to the subject. The architect's problem is to discover the best solution, given the site, the needs of the owner and the proposed cost. The relative importance of each is in the order named, although as yet, in America, it is usually reversed.¹

In planning a house—especially the house for a family of moderate means—the cost of upkeep is almost as important a consideration as the cost of

¹ For methods of laying out tracts of land for suburban communities, see author's "Concrete and Stucco Houses."

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the house and the land. If the house requires four servants to care for it properly and you can only afford two, you cannot keep it clean and tidy, and weeds will take possession of your garden. Many a house, lovingly and painstakingly planned, has passed from the owner's possession—sold, often at a loss, because the cost of keeping and operating it was too great a burden.

If the architect's services were employed at an earlier stage than is generally the custom, better results would be obtained, and a lot of money would be saved. He is rarely consulted until the site has been purchased, when plans are desired at once, and the client is often keenly disappointed that ground cannot be broken and building operations begun the following Monday. In some instances, I have been approached and my advice sought in regard to the proposed site. Such consultations have invariably led to a better solution of the problem. After all is said and done, the site's the thing, for the esthetic value of a house, as of a jewel, depends largely upon its setting.

HE SHAPES YOUR DESIRES

AFTER the preliminary talk and the visit to the site, the architect is equipped to prepare tentative sketches and these may be mulled over by the owner, perhaps during an entire season. As a consequence the house is made to fit the environment, and the owner is given time to study the drawings with care and to secure a reasonable estimate of the cost, so that when the actual work on the house is begun all parties know what to expect, very few hitches occur, and practically no changes are made. A house built under these conditions is apt to cost less and be more satisfactory, both to the owner and to the architect, than one that is rushed to completion in a few months from unstudied plans.

And here it might be well to remark the penny-wise and pound-foolish policy that prompts the client to ask the architect to give the best of his talent and experience and in the same breath to cut the rate of his commission. The fees established by the American Institute of Architects are no more than will give a fair return for the services rendered. The architect who shirks his duties to obtain a larger

HE SHAPES YOUR DESIRES

profit and the scab who makes a practice of rate cutting are in the same class, and inferior workmanship may be expected of both. No reputable architect will overcharge for his services. He is much more apt to undervalue them. Furthermore, he is in a position to save his client a sum as much as, and often more than, his fee, by reason of his familiarity with the supply markets and his experience in the use of materials of one kind and another. In a hundred and one ways he is fitted to suggest savings and economies unknown to the layman. It is not to be expected, however, that he will busy himself trying to reduce the cost to the owner (when every dollar saved lowers his own commission proportionately) unless he feels that he is being adequately paid, and is insured a fair profit on his labors. The architect's fee is but a small part of the cost of the house, and the owner makes his first expensive mistake when he tries to save anything by attempting to secure the expert services he expects at a bargain counter price.

The following correspondence between Henry Bacon, generally regarded as one of America's greatest architects, and myself, is a fair illustration of the desire of architects to deal fairly with their clients in the matter of fees, neither to overcharge them, nor yet to undervalue the service.

ECONOMY IN HOME BUILDING

June 28th, 1918.

MR. HENRY BACON,
101 Park Avenue,
New York City.

DEAR BACON:

When Mr. Donald MacRae came to me on your recommendation, for which I again thank you, and asked me to design and supervise the erection of three or four workman's cottages for him in Wilmington, N. C., and desired to know my charges, I told him that if agreeable I would leave the determination of the amount of my fee to you. He accepted the proposition and I am now writing to ask you to name, in your estimation, a fair fee for designing and supervising the construction of a group of four, or two groups of two, semi-detached, frame houses in Wilmington, N. C., to cost approximately \$15,000 in all, to be built under a general contract, giving full architect's services as defined in the printed contracts of the American Institute of Architects.

I may say that for the past five years I have done no residence work for less than 10% for complete services, nor would I ordinarily engage in any complete work costing less than \$10,000 for less than 15%. My own feeling would be that 10% would be a very reasonable charge in this case in view of the economic problems involved and the desirability of making these houses models of excellence in every way.

Very truly yours,

OCH:H

(Signed) OSWALD C. HERING.

June 29, 1918.

MY DEAR HERING:

Your letter of June 28th received. I think a commission

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of 10% on the work Mr. MacRae proposes to have done in Wilmington is a very moderate one. I think that in addition to this charge you should be paid a per diem charge for the time spent in traveling and superintendence. The cost to the architect of designing houses of such small cost as those proposed is approximately the same as designing those costing twice as much, and the commission of 10% for small work leaves very little profit, if any, for the architect.

Yours very truly,

(Signed) H. BACON.

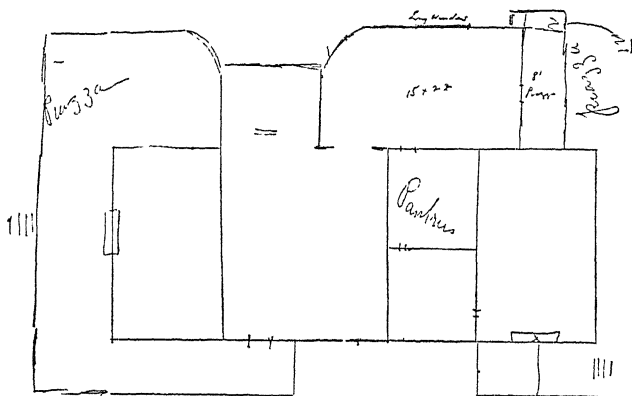
Oswald C. Hering, Esq.,
8 West 33rd Street,
New York, N. Y.

I did not make a per diem charge—as suggested by Mr. Bacon. Consequently, as he predicted, there was very little pecuniary profit in the services rendered.

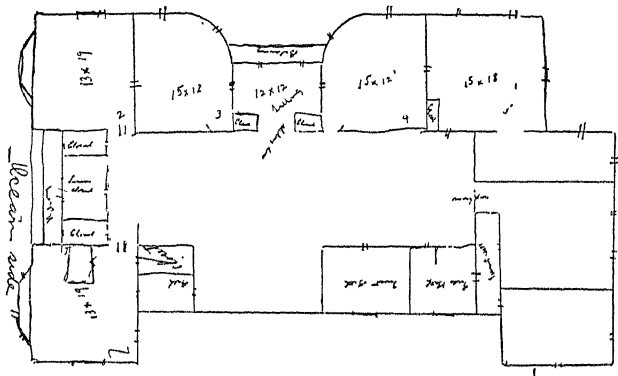
Few people realize the extent of an architect's duties and none of them quite understands why he should be paid three fifths of his fee before a spadeful of dirt has been turned.

First of all, there are the meetings and heart-to-heart talks either with Friend Jones and his wife, or that product of the dark ages, the "Building Committee." The architect then makes his first sketches, often dozens of them, scores of them, before he is himself satisfied. The owner, however, generally sees but one set of sketches, the last one. Then dis-

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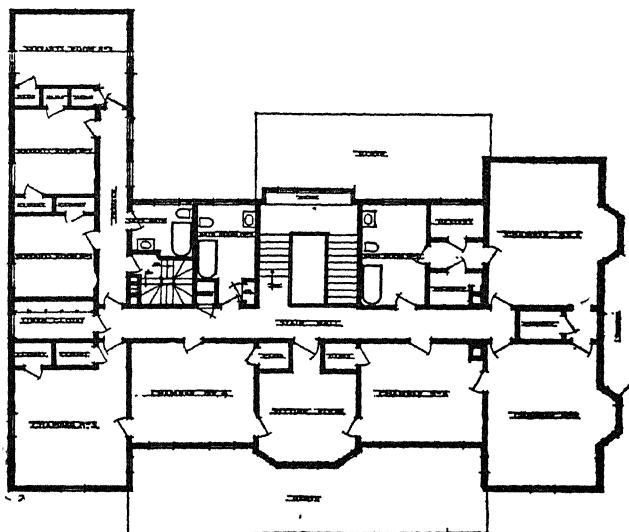
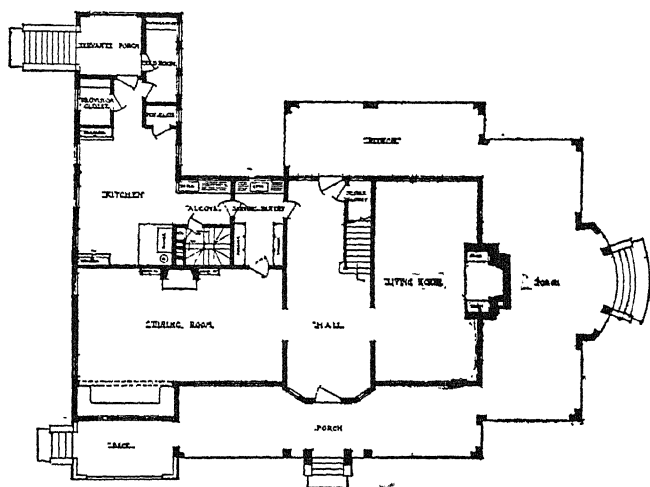


The owner's sketch of the house in Belmar, N. J., indicating her requirements on the first floor.



The owner's sketch of the house in Belmar, N. J., indicating her requirements on the second floor.

HE SHAPES YOUR DESIRES



The architect's plan of the house in Belmar, N. J., following the requirements shown in the owner's sketch. Note the correct proportions of the second story stair hall. Comparing the architect's plan with the owner's sketch, it will be seen that the relative position of the rooms is almost identical. Oswald C. Hering, architect.

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cussions arise, leading to changes, and more sketches are made. Finally all parties agree and the larger scale working drawings are begun. Meanwhile the architect sends his client a bill for approximately a fifth of his fee to cover the cost of his personal time and labor and the office expenses incurred in preparing the sketches.

The preparation of the working drawings and specifications is the biggest item of all the architect's expenses. These drawings are usually made by draughtsmen who receive salaries of from \$40 to \$80 a week and some drawings require the exclusive time of one draughtsman for several weeks. Likewise, the specification is usually written by a high salaried man, sometimes an expert specification writer employed in that capacity alone.

To Friend Jones and his wife, or the Building Committee, is then delivered a more or less bulky roll of blue prints, very business-like in appearance and much less attractive looking than the lovely sketches. They are generally covered with a mass of figures and hieroglyphics, notes and codes, which together with the technical language of the specification are utterly unintelligible, at least to Mrs. Jones, and to Mr. Bonehead of the Building Committee.

When the architect finally secures what is often a half-hearted and reluctant approval of these for-

HE SHAPES YOUR DESIRES

midable and suspicious-looking documents, he sends in a bill for two fifths more of his fee! At this juncture, Mrs. Jones and Mr. Bonehead are not the only ones who fail to comprehend. Both go up in the air and Mr. B. invariably hits the ceiling. Yet, were the truth known, nine architects out of ten have up to this time spent more on the work than the sum they are entitled to receive. An architect who thinks he has a paying job before it is finished and he has received his full commission is a thirty-second degree optimist.

As soon as the architect has learned the human factors of the problem, its happy solution is merely a question of his ability to turn them to interesting account. The client should be the main source of supply so far as "personality" goes, but he should allow the planning of the house to be evolved in a rational manner, in harmony with the environment and the spirit of the times. I recall one instance where a house was practically built around a rug. It cost my client, a young married man, several thousand dollars to avoid the chance of hurting the feelings of his mother-in-law. She had presented her daughter with a large rug as a wedding present, and to accommodate it the house had to be made much larger than was necessary. In another case my client owned a dining-room set, numberless, large,

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cumbersome oak pieces, of the period known as early Grand Rapids, and which would have required a huge room to hold them. After much persuasion and argument I prevailed upon him to sell them. I then designed a spacious but much more economical dining room and bought him some appropriate furniture in keeping with the style of the house for less than it would have cost to harbor his oaken monstrosities.

The architect should bear in mind that he acts largely in the capacity of an adviser, and he must respect the owner's wishes unless he can convince him of his error by clear argument and clean-cut illustration. In other words he must demonstrate just how the work is bound to suffer if his client insists upon pursuing an impractical course. On the other hand it is to be supposed that the client will seriously consider the architect's advice before it is rejected, for it represents the fruit of many years' study and experience, which cannot be safely disregarded.

It is the architect's duty to provide all possible information to enable the builder, first, to estimate the cost closely and confidently, and, second, to enable him to build accurately and intelligently. I have been astonished sometimes to see the meager drawings, small in scale, accompanied by a few rough, sketchy details and a short and equally sketchy specification, which the architect has considered sufficient

HE SHAPES YOUR DESIRES

What Every House Builder Knows - - - By H. T. Webster



This is what happens when no architect or quantity surveyer is employed to determine the true values of the parts eliminated and substituted.

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for the purposes of building, and apparently worth the price of his fee. No wonder so many people balk at paying an architect the fee established as the minimum return for his services. They see, and apparently get, very little for their money and naturally they are surprised to receive what they regard as an unduly large bill for such trifling services.

Poorly or insufficiently prepared plans and specifications invariably result in a proportionately higher cost of the building. The relationship of the cost of the building to the care, accuracy and completeness of the plans and specifications is a very close one. For example, the architect should bring all his power of persuasion to bear upon the owner to permit him to make the plans as complete as possible, for the purpose of procuring estimates. As a rule the owner does not care to pay the architect's charge for so much work before the building is begun, but he may defeat his own end by taking this stand, for the more comprehensive the plans and specifications are the lower the bids will be. After the contract for the construction of the building is signed, the architect should not, of course, save himself any pains to supplement the drawings already made, with others, together with such further information as may be required to perform the work in the best and most economical manner.

HE DEVELOPS YOUR APPRECIATION OF GOOD ART

WHILE magazines, books and newspapers have been, especially in the past fifteen years, a big factor in educating the public mind in regard to architecture, readers should be careful to discriminate between gold and dross. For example, when you come across those pretty pictures of plans of houses and gardens, accompanied by a contractor's detailed estimate of cost, it would be wise—before selecting one and starting in to dig—to get some professional advice.

Let us glance for a moment at one of these pictures, "a charming villa" which a "reliable contractor" swears he can produce for "\$7000." "The exterior," according to the description, "is an original design." This is painfully true. In other words it is an architectural abortion. The plan resembles a crazy quilt with a pattern of "nooks" and "bays" and "seats." But the full note of bad taste and irrational design is sounded in the "perspective view of the living room." Here we have a baronial hall in the New Art style which if executed in modest materials of the size depicted in the generous "per-

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spective," would total as much as the estimated cost of the "villa," and rapidly induce melancholia in the unfortunate occupant. The pictures themselves would merit no serious attention were it not for the accompanying "detailed estimate of cost." Here is practiced the most brazen deception. Of what possible value are these figures without a specification? Granting that the prospective owner succumbs to the pictorial anesthetic and actually believes that the thing before him could become a home, let us examine the "estimate."

First we have "Excavating, \$130.00." Good. In a favorable soil it might be accomplished for the sum named. But what if rocks, boulders or solid ledge are encountered, to say nothing of silt and quicksand? The next item is "Masonry, \$1740." A vague term is "masonry" at best. Stone laid in mortar is perhaps the first picture in the mind's eye of the layman, or if he is more sophisticated he will translate this into brick or concrete. But of what quality and kind? The writer, who boasts of no more than ordinary physical strength, once kicked over a section of "masonry" wall 12 inches thick, 3 feet high, and 3 days old, built of dry brick laid in a mortar composed of lime, loam and a suspicion of cement; at least there were some empty cement bags lying ostentatiously in the foreground. What is assured,

HE DEVELOPS APPRECIATION OF ART

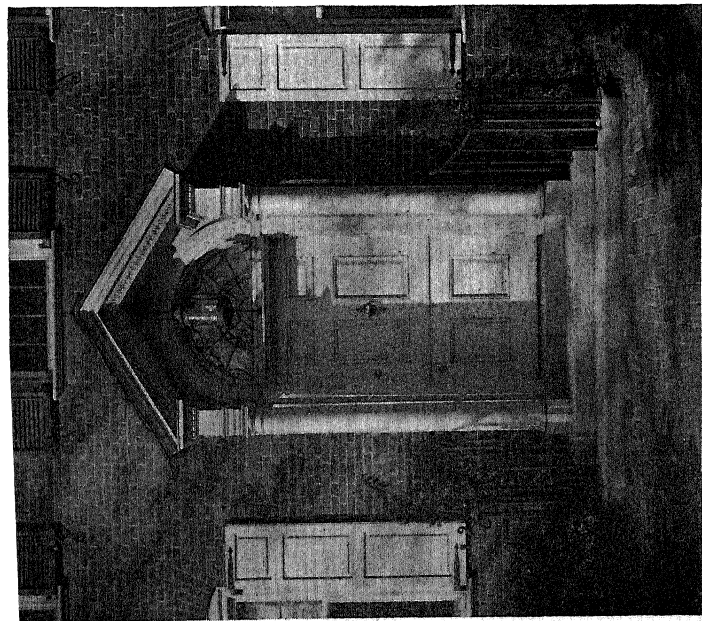
therefore, in the sworn statement of a reliable contractor that the "masonry" will cost \$1740? Nothing, except that it will probably be very poor stuff. And so on through the list. What *kind* of plumbing and hardware, what *quality* of woodwork and painting? "Steam heat and electric light" sounds alluring, but at the price it would be cheaper and safer to rely upon the trusty fireplace and candle of our forefathers.

That some of the plans published in these magazines and newspapers have merit is unquestioned, and that a few might be substantially built for the sum named is possible, but most of the perspectives are "faked," the plans are generally illogical, if not impractical, and the estimates misleading. Their baneful influence extends, too, further than might be supposed. Time and again has the writer received preliminary data for a more pretentious residence innocently based upon the size and equipment of one of these "villas." The client reasons as follows: "If I can build the house pictured here for \$7000, then I can obtain one ten times as large and luxurious for \$70,000." Many a fond hope has been dashed by accepting the \$7000 "villa" as a working hypothesis.¹

¹ For a description of how to build country and suburban houses of durable construction—and fireproof—see the author's "Concrete and Stucco Houses."

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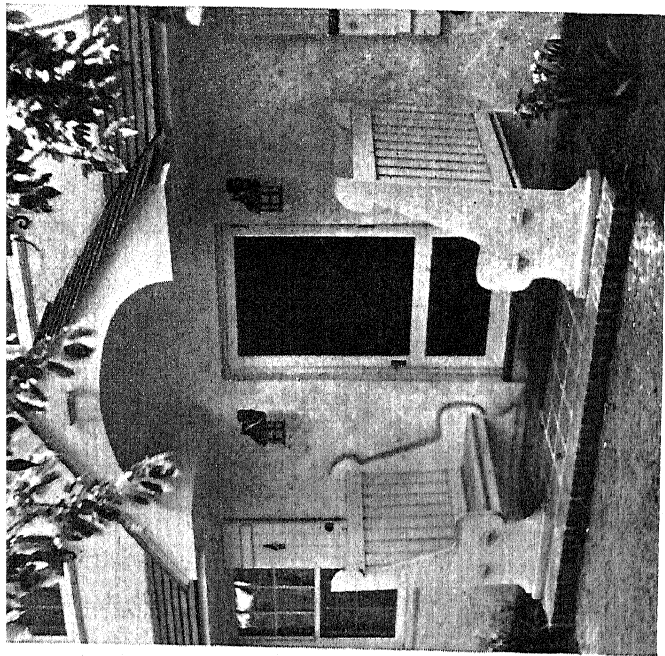
Another pitfall to be wary of is the company that advertises a method by which it will design and build your house, complete, for a given sum, "including the services of an architect." These building companies are generally purely money-making institutions, having no regard for the rights and privileges of the owner. Their claim that they have the services of "experienced architects" is a clever ruse, for the average layman does not know that architects of standing do not sell their services to the contractor. By this method of building, individuality is usually lost and the home is practically machine made. The very fact that these people advertise advantages and savings from their system of wholesale buying and manufacturing, and the employment of men "skilled in every department from foundations to furnishings" means a cut and dried process, and a fair guarantee that the product will be commonplace. The man who intrusts his bank account to such organizations and to the so-called "builder-architect" should have cash a-plenty and not be over-particular as to quality and style. He will probably get the product of the mill and the factory. For, mark you, the specification has no value at all unaccompanied and uninterpreted by an accredited agent of the owner, who will see that it is carried out. The charge for this supervision (if adequate) and other "services,"



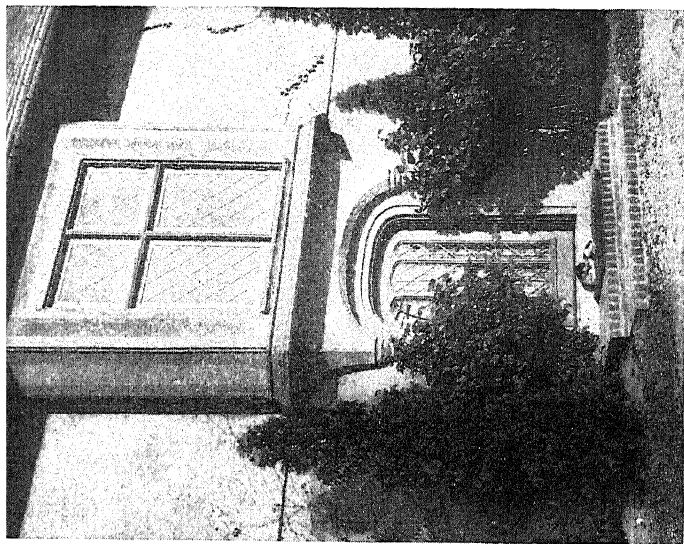
A nicely balanced doorway. Every detail in this picture, from the lantern to the shutter hinges, is testimony to the designer's skill and thoughtfulness. Dwight James Baum, architect.



An exquisite detail of the Hare residence. The wrought-iron balcony and wood trellis provide the central motif. Charles A. Platt, architect.



The "Dutch" hood affords a practical and inexpensive protection to the front door. Henry H. Saylor, architect.



A detail of the front door and of the bow-window on the staircase landing of the Ogontz house. Oswald C. Hering, architect.

HE DEVELOPS APPRECIATION OF ART

would probably be as much as an architect's fee for complete services, so no real saving in cost is effected as the company claims, and all manner of trouble is invited in the absence of a qualified architect.

It is a curious fact that where a man will hesitate to spend \$100 for a reliable watch, or for a serviceable suit of clothes, he will deliberately contract to spend thousands for an unknown quantity, without proper safeguards and guarantees. The best way to secure himself against disappointment in building is to employ an architect of good reputation, and most people will agree, after the work is completed, that his services have been the most important and least expensive factor in building.

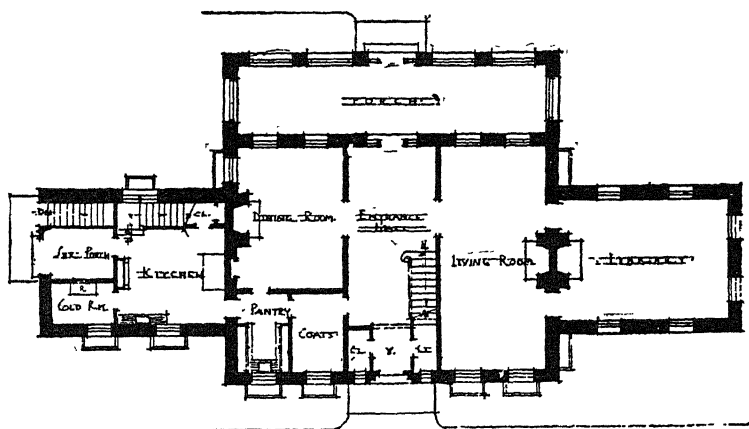
One of the most trying commands received from the owner is to provide something "original"; something odd and unlike what his neighbor has. This desire to be "different" is a healthy one and is highly commendable, if not carried to an extreme. But many people are beginning to realize that to live among oddities is tiring to the eye and generally disturbing. Simple forms and harmonious colors, avoiding the conspicuous and the glaring, will generally be found to wear well and be the most productive of real enjoyment. It is a great mistake to suppose that there is no intermediate step between so-called originality (often perilously near to vul-

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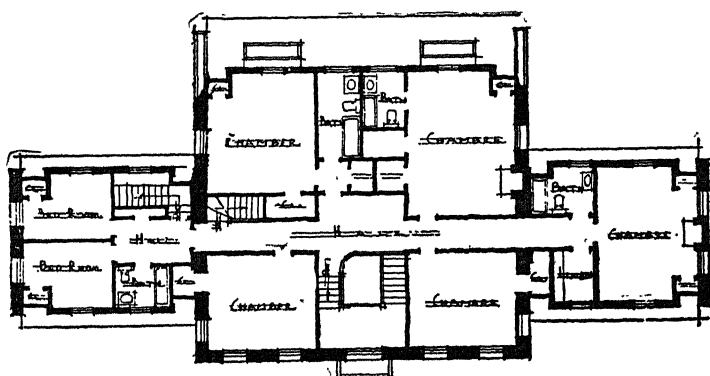
garity) and what is termed commonplace. Beauty of color and chastity of form find a parallel in harmony of sound and purity of tone. Our ears are generally better trained than our eyes. Most of us can readily distinguish between harmony and discord, in music, but we often fail to discover incongruity in form and color. The approved styles of the past, modified to conform to present conditions, will generally produce an agreeable composition. But this requires a trained and experienced hand.

Fifteen years ago, the average owner interested in building a house was mostly concerned with its superficial appearance. Women, in particular, were rarely interested in anything but the pictures of the finished outside and inside surfaces. The plan, beyond the assurance that the rooms would be of a certain size, "with plenty of big closets," claimed but little of their attention. As for the specification, it was often ignored entirely, even by the man, or passed over with general instructions to "have it substantial." But travel and reading have done wonders. Most people now know that, in actual practice, the value of these three divisions is, if anything, reversed. Of most importance is the specification. It designates the kind and quality of the material and labor to be employed. Of similar importance is the

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A saving of several thousands of dollars could be made if no library is wanted and the porch placed where the library is now. In that event the bedrooms over the present porch would be smaller, although adequate. Oswald C. Hering, architect.



It is always a good plan to provide accommodations for the servants in a wing of their own. Oswald C. Hering, architect.

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plan. To the practical arrangement and interesting sequence of the rooms are due, in a large measure, the comfort and pleasure of the occupants. The plan and specification are the backbone and vital organs of the structure. As for the superficial treatment of the exterior and interior surfaces, "handsome is as handsome does" applies to buildings as to humans. Just as clothes do not make the man, so the decoration of walls and ceiling does not make the home. Generally an architect who can draw an interesting plan and write a good specification can be depended on to produce a pleasing façade.

The signs of the times indicate a decided advance in public appreciation of good art and good building. Especially should the young architect feel exultant at the prospect before him, for no profession offers a wider field of promise than is opened to him in American architecture. It is the duty of the architect to cultivate and guide the public taste. His work, unlike that of most professions, is ever "in the public eye" and subject to daily comment and criticism. It stands, a monument to virtue or iniquity, open to praise or ridicule, from

"Rich man, poor man,
Beggar man, thief;
Doctor, lawyer,
Merchant, chief."

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All of these gentlemen may successfully hide their failures. Even the engineer may temporarily cloak defective structure with the architect's mantle. Endowed with such powers for good, or for evil, there rests upon the architect a grave responsibility demanding from him the highest form of mental and moral equipment. Let him show his capacity for good deeds, let him prove his worth, and the public can be trusted to give him place in the councils of the nation.

HE INFORMS YOU OF THE FUNCTIONS OF THE ARCHITECT

AFTER years of study and deliberation a committee of the American Institute of Architects prepared and adopted the following statement descriptive of the functions of the architect, for the purpose of supplying information to those outside the profession of architecture who are interested in building:

The Building.

As all buildings are seen, society has a right to demand that none be ugly; the life of the community requires that none be unsafe or dangerous to health; social economy requires that they be not wasteful of space or ill-suited to the purpose for which they are created. Every building is to some extent a public matter—even a private house. No building should be erected that is not an attractive addition to the landscape. A well-designed building is a more valuable property—a better investment. A well-constructed building is a more economical investment. No owner, however skilled, can design and build the simplest house equal in beauty, utility and

THE FUNCTIONS OF THE ARCHITECT

cost to one completed under the guidance of a trained architect.

The Architect.

An architect should have a fundamental knowledge of his art as an expression of beauty, of structural requirements and of practical design and planning. The practice of architecture requires business executive ability of a high order. Inasmuch as the owner's financial interests are deeply involved in the architect's action, the integrity of the latter must be above question. The development of a well-equipped architect demands long and careful study and preparation.

Registration laws in many states require a high school training, graduation from a recognized collegiate school of architecture or ability to successfully pass special state examinations and specified terms of practical experience in an architect's office. Such legislation is yearly becoming more widespread and the provisions are increasing in stringency. A very usual preparation for the practice of architecture includes four to six years in a technical school or college, a year or two of travel and an extended apprenticeship in an established office.

The architect must be familiar with the history of architecture, with the various "styles" and with

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such allied arts as sculpture, craftsmanship, interior decoration and landscape design.

Properly to define and supervise the construction of any but the most elementary structure, the architect must either personally or through his organization have knowledge of all kinds of standard building materials and types of construction, with the ways in which different kinds of work are performed, and a competent understanding of the principles of heating and ventilating, plumbing and sanitation, electrical systems and other special departments of the building industry.

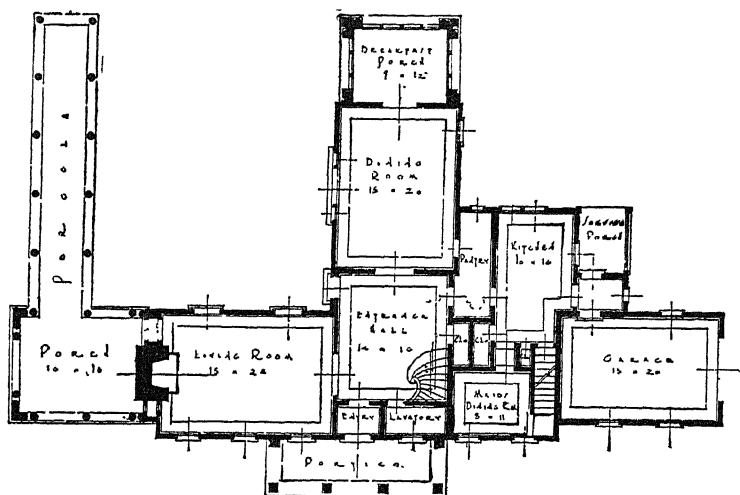
Certain buildings require special ability in exterior design; they must primarily be beautiful. Others require special knowledge of particular methods of construction. Still others require technical familiarity with the peculiar uses for which they are erected.

Therefore the owner should consider the natural tendencies, training and special experience of the architect he proposes to employ for a specific type of building.

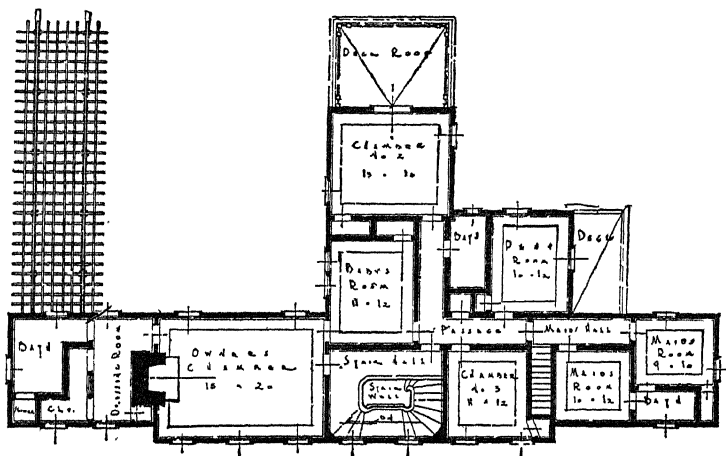
The Duties of the Architect and of the Owner.

After he has been appointed, an architect obtains his client's description of the requirements, studies the problem from all available angles, advises the

THE FUNCTIONS OF THE ARCHITECT



First Floor Print



Second Floor Plan

Charles A. Pappasod
A r c h i t e c t
30 E. 4th Ave. St. L. C.

A house with the garage attached. The entrance hall is generous and the sequence of rooms pleasing. Chester A. Patterson, architect.

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client of ways in which the first idea may be improved and makes rough drawings or sketches of the building, expressing this. These sketches should be modified and redrawn until both the owner and architect are satisfied that a completely adequate solution has been found. If an owner is not familiar with drawings as an expression of form, the architect should carefully explain them and if necessary have a model of the final structure made. It should be noted that the manufacture of such a model implies an added expense which the architect cannot fairly be expected to assume. At this period, the owner should give to the study of the problem ample time and should make a personal effort fully to inform the architect and to understand his solution.

When the sketches have been finally approved, working drawings with dimensions and notes and specifications are made. Large scale and typical full size details are often drawn at this time. The production of working drawings is very costly. Changes in them usually involve serious expense. Hence working drawings should not be begun until the scheme is well developed and determined. The owner should freely give his personal time to an examination of these drawings, the details and specifications. Although he may not understand all of the technicalities he will know how the different parts

THE FUNCTIONS OF THE ARCHITECT

of the work are to be treated and will be able to discuss with the architect points that might otherwise be contrary to his desires.

The next step is that of obtaining proposals from contractors. If competitive bids are desired, the architect usually prepares a list and should carefully examine the ability, financial responsibility and reputation of those he recommends. When the owner selects the contractor, the architect usually feels relieved of responsibility. However, he should report his objections to the owner if he believes the contractor is unsuitable. The owner may employ one general contractor or several for different parts of the work and when a contractor has been selected the architect prepares the contracts and should have the necessary legal knowledge and experience to do this satisfactorily in the ordinary case without the use of an attorney. The American Institute of Architects issues special forms for this purpose as well as for other contractual relations.

During the progress of the construction, the architect supervises the work and he should diligently guard the interests of the owner inasmuch as they might be damaged by inferior work, improper bills or unjustified claims for extra payments. At the same time he should see that the terms of the contract are fulfilled in a just and equitable manner as

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regards both owner and contractor. In view of the fact that he must remain an unbiased judge of all questions, he should have no financial interest in the building operation and therefore cannot assume any guarantee of the cost to the owner.

The Reasons for Employing an Architect.

All building undertakings are better and more valuable if they are more beautiful. A building is a better investment when it is well planned and if it be attractive in appearance. Bad planning, waste space, poor means of circulation, fire hazards, usually result in loss of income, higher percentages of taxes to income and increased insurance rates. In many engineering problems, bridges and towers, for instance, an architect is called into consultation to determine the design just as in more predominantly architectural problems a structural engineer is called in to design the steel skeleton.

The average client is unequipped to design or direct the construction of his building. His attempt to do so is as certain to court disaster as would be his untrained effort to supplant his physician for his own cure.

The architect usually saves his client considerable unnecessary expenditures of money by eliminating or lessening the number of expensive changes after

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the contract has been let. When contractors' competitive bids are received, well-defined plans and specifications permit accurate estimates, thereby eliminating the addition of large sums to guard against uncertainty. The architect obtains for the owner all the benefits that accrue from legitimate competition. If the contract be let on a cost and percentage or fixed profit basis he carefully checks the accounts. He also secures for the owner proper compliance with the contract and the elimination of defective material and workmanship.

The Architect's Charges and the Cost of the Work.

The fees to be paid should always be discussed frankly by owner and architect and determined clearly at the beginning of the operation. If the proper amount or rate of charge cannot be settled until the extent of the work has become definite, a preliminary charge for consultation, early sketches or estimates will usually be found acceptable to the architect.

The Schedule of Proper Minimum Charges of the American Institute of Architects defines the customary fees if the work be performed on a percentage basis. If the operation be divided into several contracts the architect's labor is greatly increased, and he eventually performs the work for which a general

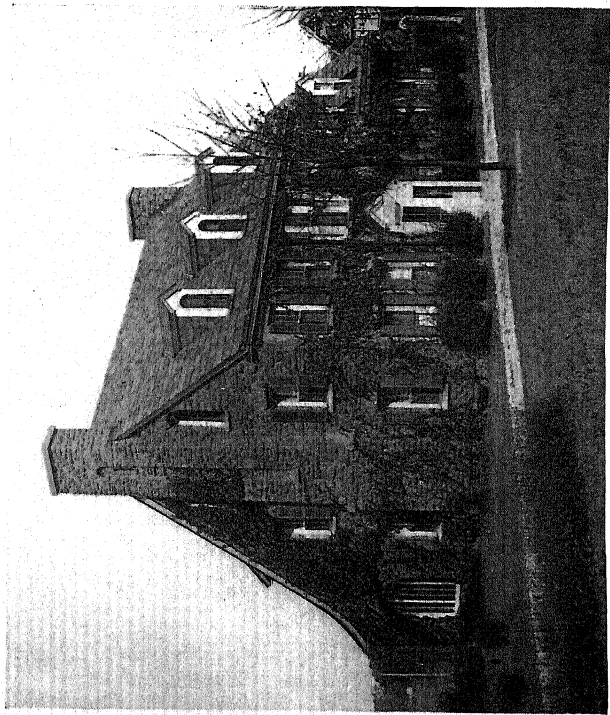
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contractor would be employed, who would probably receive ten per cent for his services. In such event the architect should be adequately paid for such additional services by a marked increase in the percentage of his fee. It is usual for the owner to pay for the cost of special engineering services, traveling expenses, blue prints, long distance telephone calls and telegrams.

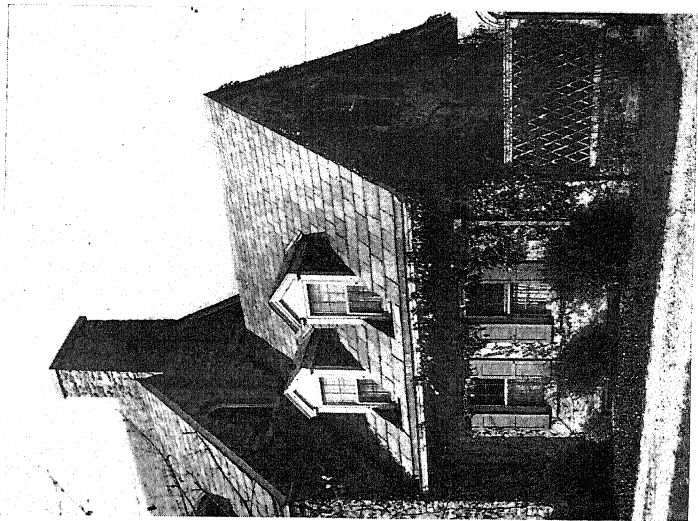
Two other forms of compensating the architect obtain to some extent. The architect may agree with the owner upon a specified lump sum for his services in supplying drawings, specifications and even supervision for the whole operation; or he may be paid for his expenses in doing the work, plus an agreed profit, which may be either a percentage of this cost or a lump sum for the architect's personal services.

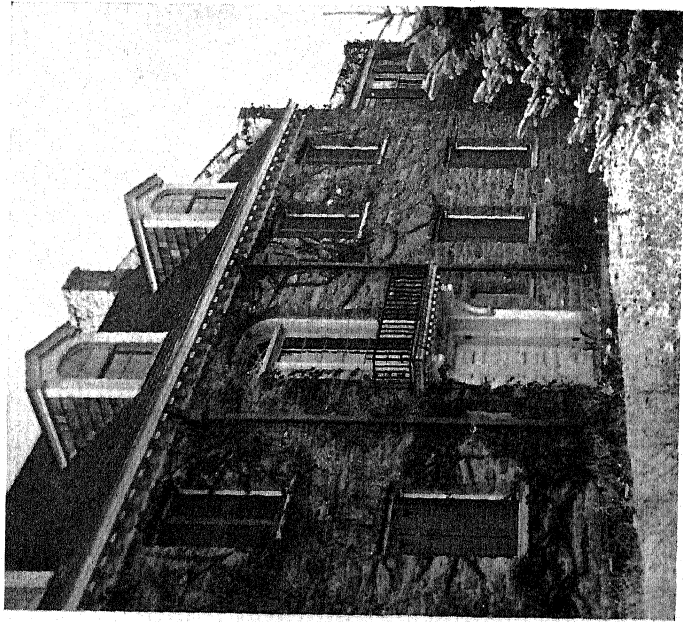
An architect may be employed to make drawings without supervision of the construction or to supervise without having made the design, but this is generally unsatisfactory for both owner and architect.

In general the production of simple standardized work requiring little detail is less expensive than work requiring a large number of detail drawings. The cost of producing drawings for a small operation is proportionately very much higher than for a large one. The office expenses of the architect in producing drawings and specifications are much greater than



In some European cities, when a house changes ownership, there is a law which restrains the purchaser from unsightly alterations. The desire of the new owner for a vestibule could have been gratified just as well by building it inside instead of outside. On the right the service wing of the same house. Oswald C. Hering, architect.



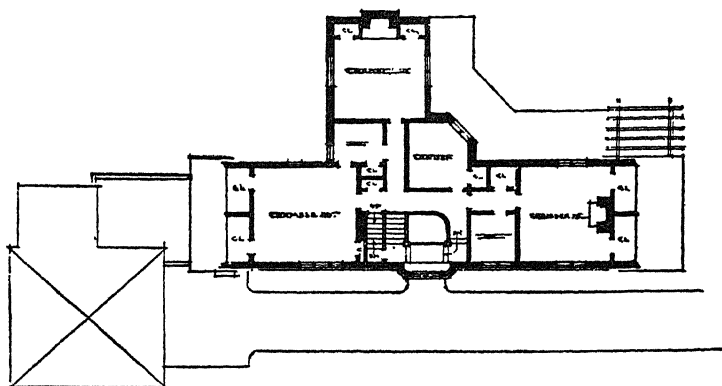
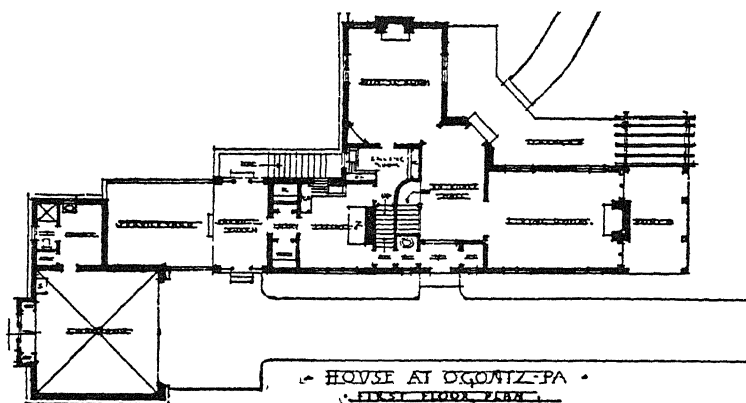


A house in Rydal, Pa., eminently suited to the locality, which has Colonial traditions. The stone was quarried in the neighborhood. Oswald C. Hering, architect.



A house and attached garage in Ogontz, Pa. The slate roofs are variegated in color and graded from small, thin slates at the ridge to large, thick slates at the eaves. Oswald C. Hering, architect.

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First and second floor plans of a house at Ogontz, Pa., showing an interesting sequence of rooms, with the garage connected with the house by a service yard. Oswald C. Hering, architect.

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the average client realizes. Much time is absorbed in the thorough study of the simplest problems. He must usually make many sketches in order to arrive at the best solution. He must be prepared to employ competent and expensive assistance in making the working drawing. To this must be added the cost of specification writing, stenography, rent, drawing materials and other overhead expenses without taking account of the superintendence which usually occupies from six months to a year. Furthermore the architect's office force must be maintained at all times in a high degree of efficiency. Consideration of these facts will show that the usual professional charges of an architect are small in comparison with his expenses and the work he does.

The Selection of an Architect.

The ability of the architect properly to perform his duties makes for the success or failure of the building entrusted to him. Moreover, he is the disbursing officer of his client, in control of large expenditures. The architect who wisely administers the duties entrusted to him may greatly reduce the cost of a building. If the public realized this fully, they would select with care the architect best fitted to the requirements of each building operation. Except for certain forms of public and semi-public work

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a "competition" is not considered by the American Institute of Architects the best means of making such a selection. The custom of asking for preliminary sketches before making a selection and therefore before serious study of the problem can take place is deplored and condemned. An architect should be selected with the same careful consideration of his work and reputation as an attorney or physician. When this is done, those who build reap the benefit by actually receiving full value for the funds they expend and the public at large is benefited in more beautiful and more useful buildings.

HE INTRODUCES YOU TO A NUMBER OF CONTRACTORS

A SERIOUS mistake is made by the owner when he allows, or courts, intimacy with the contractor. It invariably provides a loophole through which the latter may escape from his responsibility. After winning the owner's confidence, often by the ostentatious performance of an extra without rendering a bill, the builder is sometimes tempted to follow up his advantage and, under the guise of friendliness, to make all manner of suggestions that, if followed, will save himself trouble and money. He will often give the owner clever and apparently plausible reasons for delays of all kinds, and for altering the plans and specifications, and it will end in the owner's becoming confused and even suspicious of his architect. Owing to the friendly relations thus established with the builder, the owner is apt to turn a deaf ear to the architect's warning, and unless caught with the goods, the contractor will succeed in acquiring a handsome profit in extras and from modifications of the contract. Once his eyes are opened, the owner is thoroughly unhappy and curses

INTRODUCES YOU TO CONTRACTORS

the hour that he embarked on so treacherous a project. All this heart-burning can be avoided by placing in the architect the same confidence that must be accorded any professional adviser.

From this reference to the contractor, it must not be assumed that he is, as a class, dishonest and tricky. The writer enjoys the acquaintance of many builders who are not only honest and capable, but who take such pride in their work that they will not tolerate any deviation from first-class building methods. But the honest and conscientious contractor labors under a great disadvantage. The owner's unquenchable thirst for the lowest bid often invites reckless estimating and if the successful bidder finds later that he has figured the cost too low, the temptation is great to make good his loss by skimping the work. The paradox it evolved in the mind of an honest builder follows: "Do you care to estimate on these plans?" I asked him. "Well, sir," he replied, "I'll be glad to give you a bid; but dang me if I ain't sorry nowadays when I get a contract, for then I'm plumb sure I've bid too low!"

Safe and accurate bidding is a quality much to be desired in the building industry of America to-day. We might do worse than consider importing an idea in this regard from England.

There is an English institution, in the building

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trades over there, which, if established here, might well lead to a more economical solution of the building problem than now obtains under the system of calling for bids based upon the individual calculations of each bidding contractor. That institution is known as the "quantity surveyor." His services are employed in England with marked success and we could profitably employ him here in conjunction with a general contractor or, better still, without.

The quantity surveyor does precisely what his name implies. He takes the architect's plans and specifications and makes a survey of the quantities called for. In other words he prepares an itemized list of all the materials to be used in the building, as well as a detailed statement of the labor to be done by each trade, to carry out the contract and produce the effect and the object desired by the architect. Thus if some special work is required, such as wood floors laid in blocks of a herring-bone pattern, with borders in straight pieces, graded in width, this specialized labor is estimated and recorded. Gambling and guesswork on the part of the bidding contractor are practically eliminated, for each one has before him not only the architect's plans and specifications, but an itemized list of all the requirements in the way of material and labor. Consequently, it insures accurate bidding—for each con-

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tractor is enabled to base his calculations upon the same data. There is no chance of a bidder's overlooking some clause in the architect's specification or some important lines or figures on the drawings. The quantity survey protects him from errors of omission and commission. It also protects the owner. For the temptation is great, to a builder who has underestimated, by the American system, to make up his loss—at the owner's expense.

The quantity survey also enables the owner to change his mind as the building progresses, without fear that he will be gouged. For the quantity surveyor has the price of everything at his fingers' ends and if the owner decides later that he wants a slate roof instead of the shingle roof specified, the quantity surveyor, and not the builder, is the man who calculates and determines the difference in the cost. While the conscientious architect never cares to encourage changes in the plans after the work is begun, it may well be advisable in certain cases, and with the aid of the quantity surveyor it can be done without much trouble and without inviting the danger of later complications. In other words, under the English system, the owner is much freer to build as he wishes, and the architect is much freer to introduce improvements, as the work goes on, than under the American system, where both the owner and the ar-

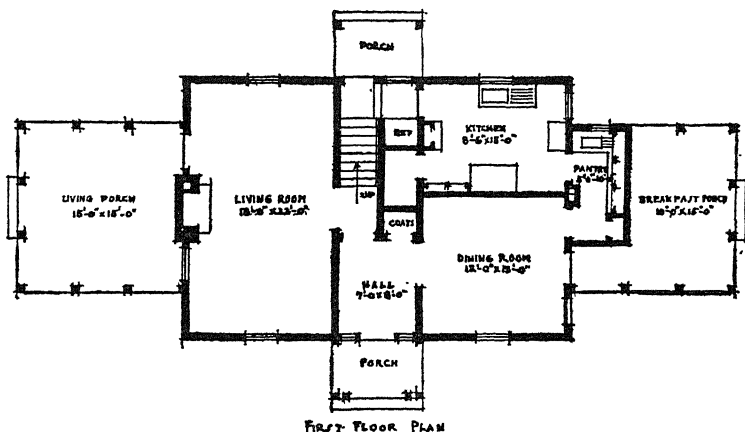
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chitect are more or less at the mercy of the builder. For if the contractor is not a fair-minded gentleman he will take this opportunity (and many figure on it in advance) to sandbag the owner and relieve him of the contents of his wallet. And there is no chance of redress—except by arbitration or a tedious and disagreeable lawsuit.

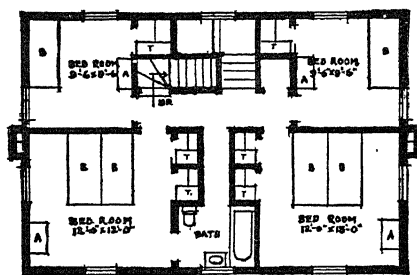
But every silver lining has its cloud and it is whispered about that when the exact nature of some particular work—such, for example, as a stained-glass window—has not been definitely decided upon when ground is broken, and an allowance, say, of \$1000, is named and set aside for its later purchase, the society of the architect is most assiduously cultivated by the manufacturers of the article involved, and elaborate entertainment in his honor is said to be the least objectionable form of proffered bribery.

There is no evidence that I know of which indicates that the architect of America is less susceptible to bribery than his confrère across the sea. But it can be safely stated that no reputable practitioner in the United States, and especially one who has subscribed to the code of ethics of the American Institute of Architects, can be bribed by manufacturers to specify their products. I am reminded, in this connection, of an incident which occurred when I was a youngster—in the full flush of a promising career

INTRODUCES YOU TO CONTRACTORS



There is practically no waste space in this plan. A door may lead from the pantry to the breakfast porch if desired. An economic feature is the stairway, which has no balusters. Oswald C. Hering, architect.



A - DRESSING TABLE
B - BED

The bedroom closets are equipped with tills, avoiding the need of bureaus, as a result of which the rooms, while small, are still commodious. If a second bathroom is desired it may be economically placed over the kitchen, next to the stairs. It will encroach two feet on the bedroom. There is a servant's bedroom and bathroom, and a store room, in the attic. Oswald C. Hering, architect.

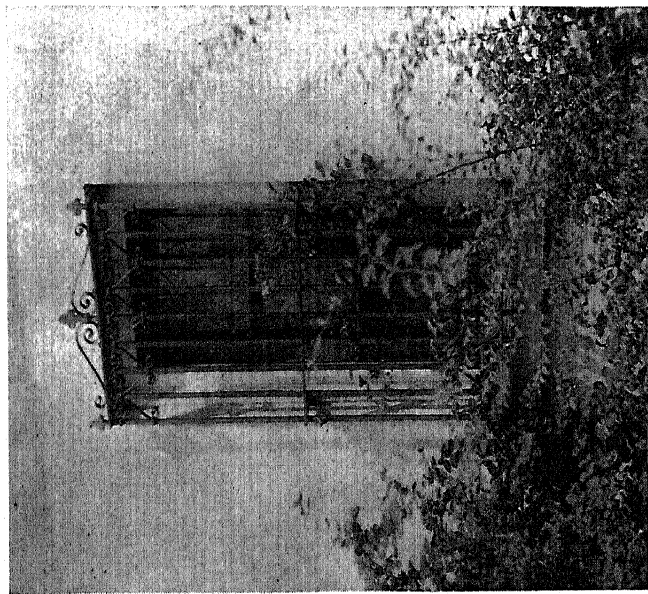
See page 60.

ECONOMY IN HOME BUILDING

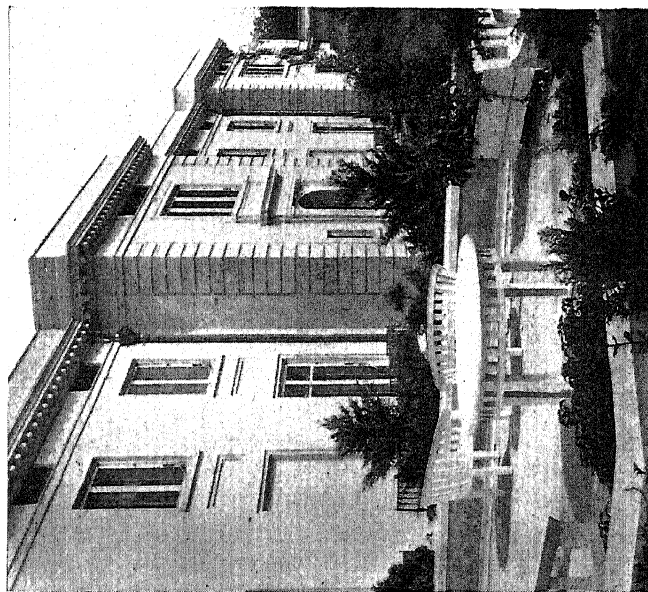
—and which taught me a lesson I have never forgotten.

On one of my visits of supervision to a house under construction in Long Island, I found that some trim had arrived which was not in accordance with the specification. The moldings had not been cut according to the full size detail drawings and the wood was of inferior quality. I thereupon called up the mill owner and told him that I would not accept the carload which had been delivered, and that he must take it away and bring trim made according to my drawings and specifications. After some time spent in heated argument and with futile pleading and expostulation on his part, he finally agreed to comply with my order. My last words to him were, "You've lost a lot of time over this mistake—so don't lose any more, or I shall have to exact a penalty."

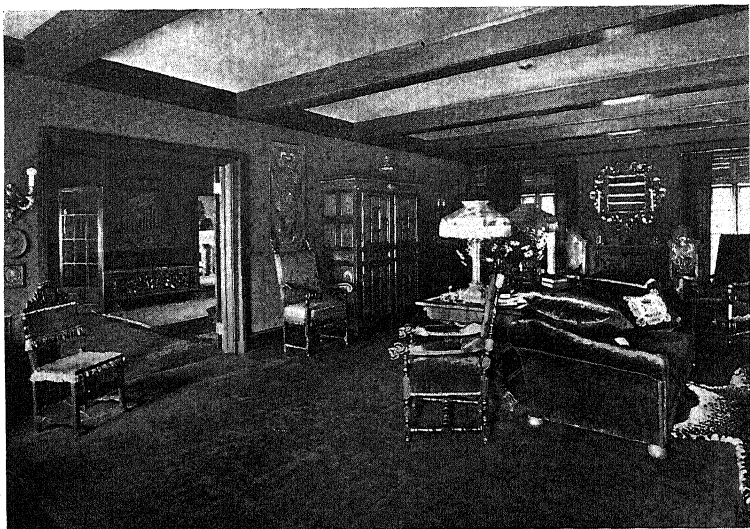
A few days later I found a small package on my desk with the name of the mill thereon, and the removal of the wrapper disclosed a cigar box. Possessed with the idea that the mill owner desired to propitiate me with a box of cigars and irritated by his tactlessness, I gave directions to have the box returned unopened and at the same time I dictated a letter to the mill owner, which I felt would thoroughly clear his mind of any hope that I could be seduced by the gift of a hundred Havanas. The day after,



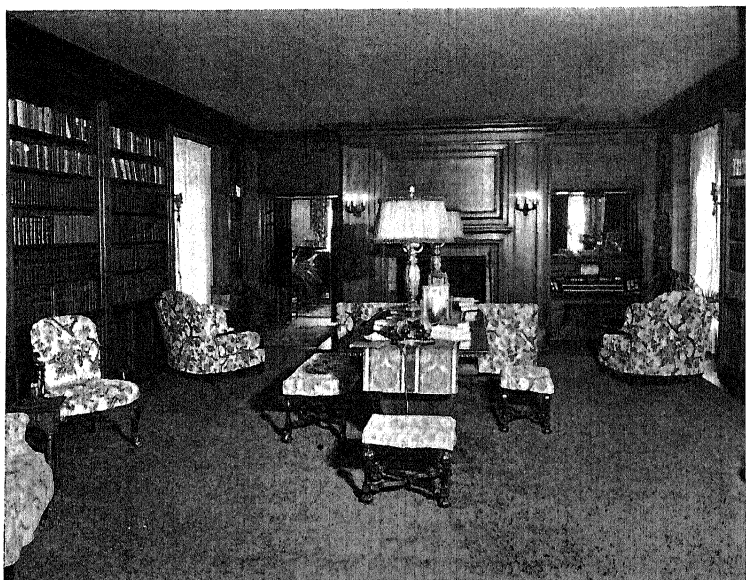
Stuccoed walls are especially effective when not punctured by an excess of openings. Stucco is a good foil for wrought-iron grilles. Oswald C. Hering and Douglass Fitch, architects.



Flat-roofed houses should have an air space above the top story rooms for insulation, obtained by fastening vertical strips to the roof beams, forming a "hung" ceiling. The air space should be ventilated by louvers. Oswald C. Hering and Douglass Fitch, architects.



Living room of the house pictured on page 98, where the Spanish note predominates. Oswald C. Hering, architect.



The library of "Trailsend." The furniture is in summer dress. Oswald C. Hering and Douglass Fitch, architects.

INTRODUCES YOU TO CONTRACTORS

the box came back—delivered by a messenger—with a note which read as follows:

“DEAR SIR:

“We have your letter of the — inst. declining to accept from us a box of cigars. We are returning the box herewith. If you will take the trouble to open it you will find not cigars—but samples of the trim you ordered and which we now hope meet with your approval. If there is any penalty to be exacted, for loss of time, we shall be pleased to share it with you.

“Cordially yours.”

Sometimes the owner, desiring to protect himself against the financial failure of a builder, purchases a surety bond. This is to-day a needless expense. I am in entire agreement with the following opinion expressed by a well-known architect of the highest standing:

“If surety companies would adopt the same policy which life insurance companies have adopted and be ready to meet obligations under their bonds promptly, I should feel like recommending to clients the advisability of using their bonds, but so far as my experience has gone, they try to safeguard themselves and undertake to find technicalities which would release them from their obligations to the owner.

“One experience with an important client brought so much difficulty in the effort to make the bonding

ECONOMY IN HOME BUILDING

company live up to its agreement that my client said in the future no bonds will be required.

“It happens that I have had several cases where contractors have failed and without any protecting bonds I was always able to take care of my client because I always had a sufficient balance left with which to let a new contract and finish the building. Working without bonds means that the architect will be especially careful not to over-certify.

“One objection against bonds is that they add a serious item to the cost of building. I am still hoping, however, that the bonding business will be put on a more economic basis than I believe it to be the case at the present time.”

My own experience has been that no trouble of any kind has occurred when builders of integrity and good financial rating have been employed. The only occasions (three in twenty-three years) when a builder has failed in the execution of work designed in my office, were when the owners were hypnotized by a low bid, and were led to accept it in the belief that they were getting a bargain. The builder later found he couldn't make good—and went into bankruptcy.

HE SUGGESTS SOME ECONOMIES

DO you like to wear well cut, nicely fitting clothes, of good material? Suppose you came into the possession of a good piece of exceptionally fine cloth—that would make you a good-looking and durable suit. What would you do with it? Would you take it to that little basement shop in the old brownstone building around the corner, run by Solomon Levinski? He calls himself a tailor, but he spends most of his time cleaning, pressing and mending suits designed and made by real tailors. He might agree to make a suit for you out of your beautiful cloth—for \$25.00. A real tailor would probably charge you \$50.00. Which man would you engage—and why?

In some of our States anybody is privileged to call himself an architect and hang out his professional shingle. When, therefore, you buy a beautiful and perhaps valuable piece of property, and on your way home you begin to speculate about the building you intend to erect upon it, and suddenly your eye is caught by the following sign—you had better run for your life.

ECONOMY IN HOME BUILDING

JOHN BOTCHETT

ARCHITECT AND BUILDER

Plumbing and Steamfitting a Specialty

Contracting and Jobbing Done

Estimates Given

What kind of architectural services do you imagine this hybrid could render? Would you invite the ministrations of a doctor whose sign reads:

ACHILLES FAITH

PHYSICIAN AND DRUGGIST

Dentistry and Ophthalmology a Specialty

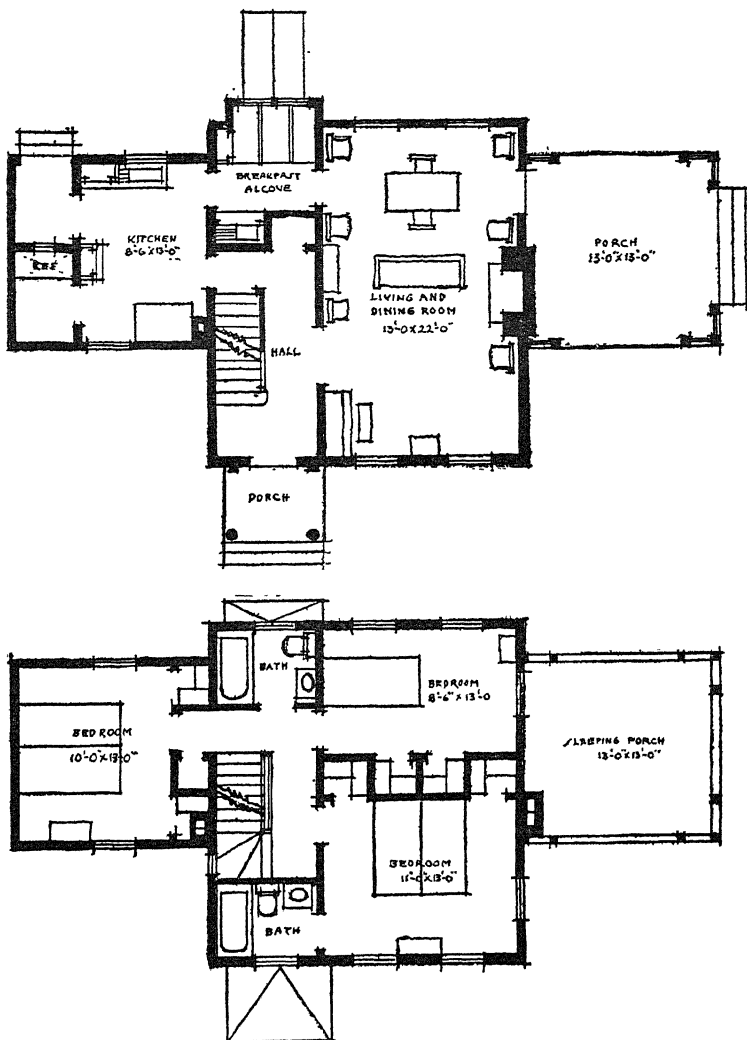
Consultations and Operations

Soda Water and Candy

Before practicing his profession, an architect is usually obliged to spend years in study and apprenticeship, for in a building operation his is the creating and directing mind. His duties may be compared to those of the general who plans and conducts a battle, and in the performance of these duties he generally develops qualities for leadership and organization that might well be used for civic, state, and national betterment.

There is still a vast amount of education to be instilled into the embryo lawyers, and doctors, and brokers, and shopkeepers, and other young men who

HE SUGGESTS SOME ECONOMIES



In this house the living room and dining room are combined, as described in the text on page 66.

A saving of about \$500 may be made by omitting the front bathroom.

Oswald C. Hering, architect.

ECONOMY IN HOME BUILDING

are now attending high school, or college, and who eventually intend to build for themselves a house, or a store, or a bank. And for the grown-ups this education has to be grafted—which is a more painful operation still—before it will make them second the motion and open their pocketbooks. But assuming that all our prospective clients are fully convinced that good architecture pays, there is yet to be removed that terrifying spectacle, the present-day high cost of building, which for some years has been frightening the investor away and paralyzing the owner's initiative.

And so it behooves the architect to investigate and discover ways and means to introduce reasonable economies. It is time for him to destroy some of the fetishes he has worshiped, and to set up more modern gods that will assist him in overcoming the cost boggy and enable him to show his client a set of plans in which a business investment is translated into architecture at no more than a reasonable risk.

In two respects the average architect is often criticized; his inability to estimate costs with accuracy and his failure to plan economically. This criticism, however, rarely can be directed against the experienced practitioner. If records are kept of the cost of the buildings he has built, he should be able to estimate the cost of proposed buildings with reason-

HE SUGGESTS SOME ECONOMIES

able accuracy. With such data and a knowledge of the rise or fall in the price of material and labor—and of the conditions prevailing in the neighborhood of the proposed new structure—he should generally be able to approximate the cost within ten per cent and should rarely be further astray than twenty per cent.

Contrary to the popular fancy, the architect is generally able to estimate with far greater accuracy than the competing contractors. I recall many cases in my practice where, in the half a dozen bids submitted by competent builders, there have been discrepancies of ten to twenty per cent between the highest and the lowest bid, and several times it has been over forty per cent. A competent architect should be able to estimate within ten per cent of the cost of work totaling \$20,000 or over, and be not more than twenty per cent out of the way on houses costing less.

Economy of plan is of vital importance. How often do we hear a man say: "I gave up the idea of building because the estimates were too high." Probably nine such cases out of ten are due to an ill-conceived plan, in which but little attention has been paid to economies of structure and arrangement. By eliminating waste space in rooms and halls, by figuring spans and heights to accord with the market

ECONOMY IN HOME BUILDING

sizes of beams and studs, by reducing the number of chimneys and lines of plumbing pipes to a minimum (in the skillful placing of fireplaces and bathrooms) or by using one material, or method, in place of another, the cost may often be so materially reduced that an otherwise hopeless proposal becomes acceptable and a profitable investment.

Another criticism directed against the architect is that "he wants what he wants when he wants it"—regardless of expense. Of course, in a sense, he is right, for beauty is beauty and good taste is good taste, whether it costs a nickel or a fortune. And where a bronze door will complete the picture and be everlasting, while an iron door, painted in imitation of bronze, will look tawdry and corrode in a few years, the architect cannot well be blamed when he cries for bronze. On the other hand, his experience teaches him many commendable economies, and the thoughtful, painstaking architect will always suggest them.

Among such economies there is one whose importance is not always appreciated. It is the superfluous room—the room that you think you want, but never use. Few owners realize what this actually means in dollars and cents. The cubic contents of an unnecessary reception room, billiard room, or den, or an unnecessary amount of waste space in rooms,

HE SUGGESTS SOME ECONOMIES

closets and halls due to bad planning, which frequently carries with it an idle room and waste space above, materially increases the total cost. Here is money invested which brings no return, and there is entailed a constant expense in interest on the capital squandered, not only on the room itself, but for furnishings and maintenance. By reducing waste space to a minimum and by omitting all but necessary rooms, and, if desired, designing the plan so that the building may be added to when needed, a sum may be saved that is generally more than the architect's fee.

Many savings in the cost of building may be made by the architect that are not generally known to the owner. For example:

The use of self-furring lath, in places where metal lath is ordinarily nailed to separately applied furring, effects a saving in cost of labor.

One of the most objectionable materials and trades in the building industry is plastering and the plasterer. I hold no brief for the manufacturers of "sheetrock" and have not to my knowledge met any member of their company, but this is what I have accomplished in using sheetrock on stud partitions in place of plaster:

A saving of about forty per cent in the cost of plastering.

ECONOMY IN HOME BUILDING

A net saving of over a month's time in the operation of applying three coats of plaster and waiting for it to become bone dry for the reception of trim.

Elimination of the deleterious effect upon the structural woodwork due to swelling, from the moisture in the plaster, and later shrinkage.

Elimination of the devastating *débris* which always follows in the wake of the plasterer.

Elimination of a trade generally receiving higher wages than carpenters and painters, the mechanics employed in erecting and finishing sheetrock.

A further interesting consequence of using sheetrock in place of plaster is the complete lack of shrinkage, or swelling, in the wood floors and trim. This I attribute to the absence of the moisture which necessarily is introduced by plaster.

Sheetrock does not, of course, lend itself to curved surfaces of short radius. But its flat or slightly curved surface can be treated as successfully as any similar plaster surface, either by painting, covering with wall paper or unbleached linen, or in any other way usual with a plaster wall. Contrary to a hasty conclusion often voiced, the joints between the sections of sheetrock do not show when properly set and treated. A shrinkage in structural members will naturally open the joints—but not more so than

HE SUGGESTS SOME ECONOMIES

would cause a crack in the plaster if the wall was plastered.

The elimination of the bureau effects a considerable saving. This piece of furniture takes up about eight square feet of space, which requires the bedrooms to be made larger than necessary. The bureau itself is a fundamentally bad and impractical piece of furniture, for the reason that constant attention is required to keep the contents of the drawers in order, and even then the articles are necessarily superimposed, and consequently hidden from view.

At no greater cost than a bureau, one half the space of a 2' 0" x 4' 0" closet (which is approximately the closet space allowed per person to a bedroom) can be fitted with a case containing shallow tills, drawers and shelves, sufficient to hold the contents of the average bureau or chiffonier, while the other half of the closet contains a rod and hangers to support wearing apparel that would otherwise occupy the entire closet, if the clothes were hung on hangers and wall hooks. A mirror on the inside of the closet door completes the necessary equipment. A net saving of \$100.00, and upwards, per bedroom, can be saved by eliminating the bureau, which at its best is a cumbersome nuisance. In a two and a half story country residence, containing four double bedrooms

ECONOMY IN HOME BUILDING

and two single bedrooms, the space saved by the elimination of the bureaus (for the size of the bedroom can



The wardrobe closet. This practical and economical substitute for an invention of the devil—the bureau—is described in the text. Read about it and save a goodly portion of your architect's fee.

then be reduced as well as the space below and above it) is approximately 2000 cubic feet, which, at 50 cents a cubic foot, *means a saving of \$1000.00*. The

HE SUGGESTS SOME ECONOMIES

bureau, or chiffonier, is not, of course, to be confused with a woman's dressing table, which is always a convenient, useful and attractive article of bedroom furniture.

HE ACQUAINTS YOU WITH MORE ECONOMIES

THE dining room in small houses and apartments is often a needless expense. This room is not ordinarily used more than three hours out of the twenty-four and contains furniture unsuited for use in any other part of the house. Its elimination requires a slight increase in the size of the serving pantry to accommodate the silver, glass, china and linen, usually kept (in the dining room) in sideboards and in china and glass cabinets, which are a great deal more costly than pantry dressers. Even with the larger pantry and the size of the living room increased to serve the diners, without encroaching on its normal space, the sum of the increases need not necessarily equal the size of the eliminated dining room. But if it does, there is a saving in the cost of most of the dining room furniture. For the chairs can be of a character useful and appropriate in a living room, and an oblong table at the end of the living room, nearest the pantry, serves as a dining table which, when not in use, is an ornament to any living room. No sideboards, glass or china cabinets are needed. The round dining table and the stiff

ACQUAINTS YOU WITH ECONOMIES

and generally uncomfortable chairs are replaced by the oblong table and more comfortable chairs. Few people who occupy small houses, and small or duplex apartments, object to a table being set and cleared at one end of the living room. If desired, a temporary screen will hide this operation, or folding doors. At the very least there is a saving of the cost of the usual dining-room furniture and a gain in the size of the living room, which adds to its usefulness and improves its appearance. Often the enlarged pantry makes it possible to fit the window end with a table and two benches, enabling a small family to eat breakfast and luncheon here and even dinner—when there are no guests—leaving the living room practically undisturbed.

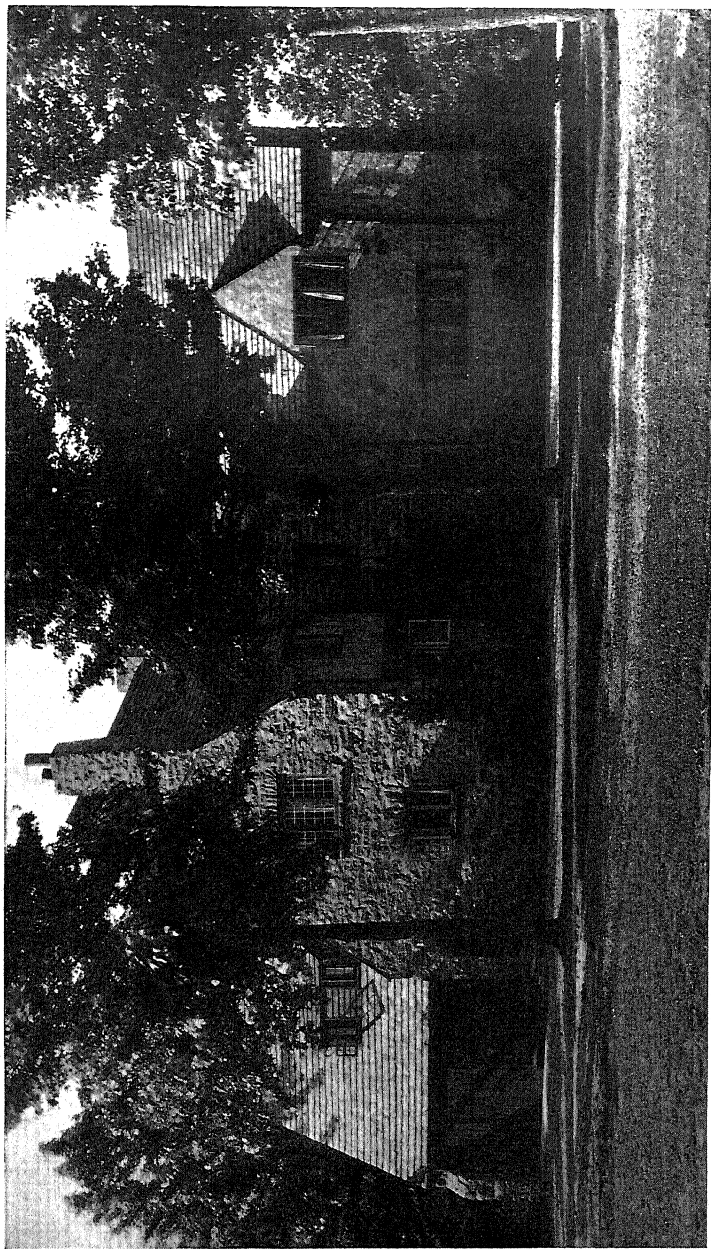
In residences, a burglar alarm is often desired. The various automatic systems are all rather expensive, more or less of nuisance to set, and often go off without the help of a burglar. I do not exaggerate when I say that a dozen times a year I am kept awake for hours by the interminable ringing of a burglar alarm which has been set off in a neighboring house by some innocent derangement of the mechanism. For years I have specified in residences a simple, inexpensive and effective burglar alarm system, which unfortunately could not be patented, otherwise I should now be living an entrancing life,

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with headquarters in Rome. I place two switches near the bed, in one or more of the master bedrooms. One of these turns on a light in every room below the bedroom floor; the other rings a 10-inch gong, which can be heard all over the house and some distance beyond. When the occupant of one of the master bedrooms is awakened by a noise that suggests a burglar, he or she merely turns over and presses the buttons of these two switches. The combination of a flood of light and the loud ringing of the gong is one that even the most expert and daring burglars have never been able to solve in any but one way. They make a rapid exit. As the bedroom is dark the occupant may rise with reasonable safety and practice marksmanship on the fleeing intruder.

Another economy that may well be considered by those who contemplate building and are deterred from starting the work in winter is the demonstrated economy of winter construction of buildings. I quote an editorial from "Engineering and Construction."

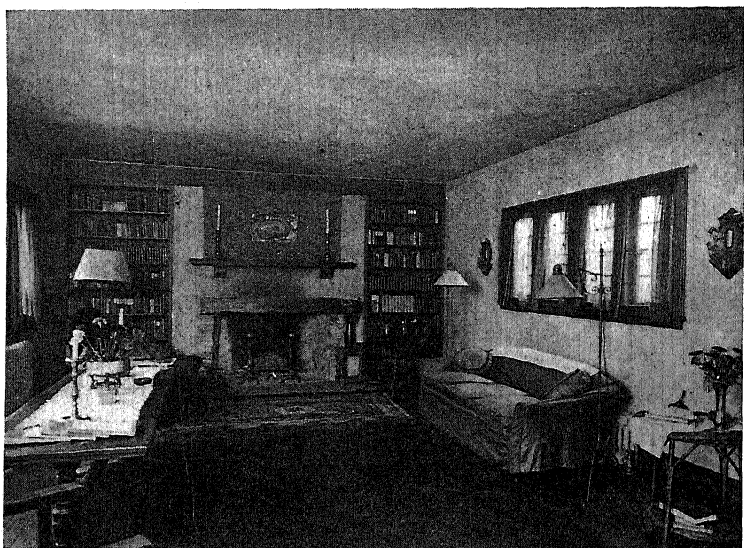
"We are all familiar with the statement of psychologists that men are the creatures of habit, but few of us undertake to apply that generalization to our own selves with a view to correcting habits that are uneconomic. For example, before present methods of construction existed, our forebears formed the habit of doing practically all their construction work



"Radcliffe House," Pelham Manor, N. Y. Rubble stone abounds in the vicinity. Stone and stucco, made into architecture, fit and adorn the environment. F. Albert Hunt, architect.



The combined living and dining room of "Radcliffe House." The dining room end has been raised so that it may be used also as a stage. F. Albert Hunt, architect.



One end of the living room of "Radcliffe House." F. Albert Hunt, architect.

ACQUAINTS YOU WITH ECONOMIES

during "good weather," that is in the late spring, summer and early autumn. This habit was at one time economic, for during the "bad weather" seasons the roads were practically impassable, and building materials could not be delivered. Moreover, in those days lime mortar was the only cementing material used for brick and stone masonry, and lime mortar cannot be safely used in freezing weather, for its hardening depends upon the chemical absorption of carbonic acid gas from the air, a process that does not occur when the lime is frozen. With the introduction of Portland cement, however, it became possible safely to build stone and brick masonry as well as concrete in freezing weather, but the age-long habit of regarding winter-built masonry as being unsafe had too strong a grip to be easily overcome, and even yet causes many men to defer construction till "good weather" comes.

Architects, engineers and contractors usually know that most classes of building construction can be economically performed in the winter, but most owners of buildings are habituated to regard winter as an unfit construction time, and consequently defer ordering building construction until spring is at hand. But even members of the building profession have not entirely freed themselves from the ancient habit of looking upon winter as a poor time

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in which to build. They know that the average workman will not do as big a day's work in very cold weather as in warm weather, other things being equal, but they overlook the fact that other things are not equal. The very fact that winter jobs are not so plentiful as summer jobs makes for labor efficiency, since men will work harder when there is risk of being discharged and of not being able to secure another job quickly.

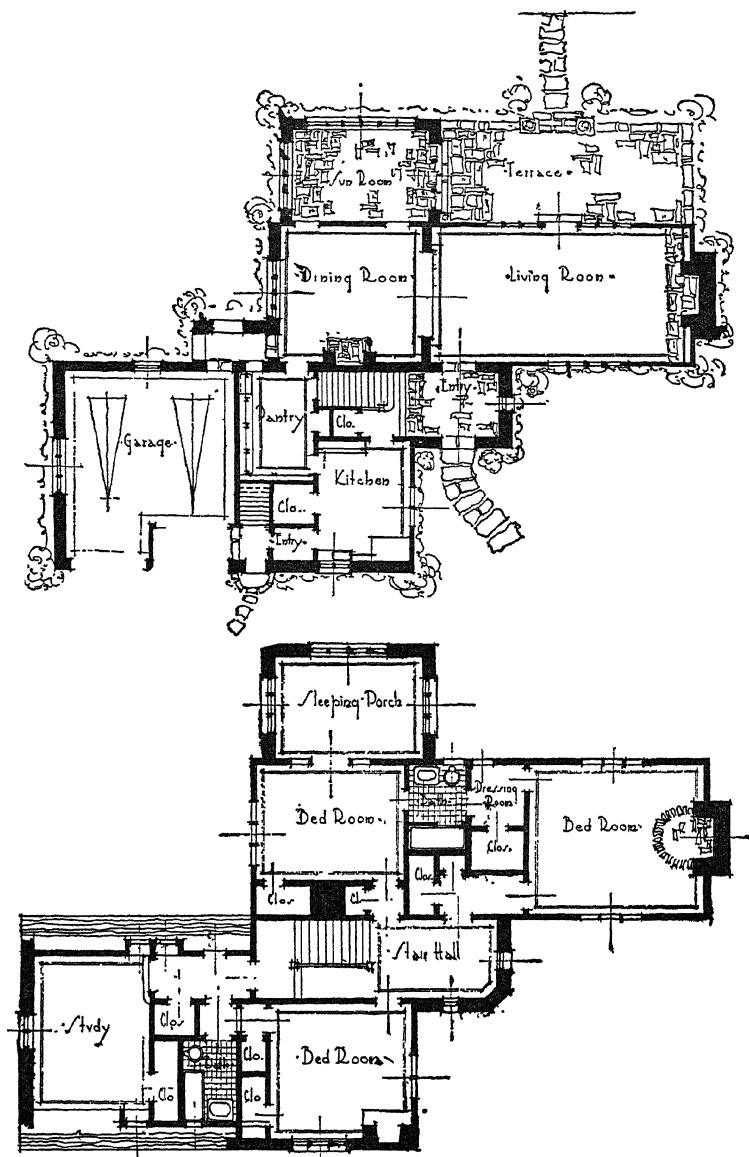
The prices of building materials are usually lower in winter than in summer, because of the slackened demand, and this reduction alone frequently amounts to a considerable percentage of the total cost of a building. Usually more than half the total cost of a building is the cost of materials. Hence a 10 per cent saving on the cost of materials is equivalent to more than 5 per cent saving on the cost of the entire building.

One of the elements of building cost that is rarely seen in published statements of cost is the cost of delays in the delivery of materials. During the "good weather" seasons both the manufacturing plants and the transportation plants are apt to be overloaded. Hence even if the factory or mill is ready to fill your order the railway or the motor trucks are unable to deliver the material. In the slack season the cost of such delays is eliminated.

ACQUAINTS YOU WITH ECONOMIES

If a building is being erected for rental purposes, it is highly important that it be finished either in the early fall or by the first of May. If construction work is planned for the "good weather" season, delays in getting work started, delays in securing materials, and inability to secure an adequate force of workmen at all times, very frequently prevent the completion of the building until after the fall renting date, Sept. 1, or Oct. 1, in consequence of which the owner suffers a severe loss of income. But even where the owner expects to occupy his own building, failure to complete it at the expiration of his lease is sure to cause him both expense and inconvenience. The cost of failure to complete a building at the time when occupancy of it is planned is an item that seldom appears in estimates of cost but frequently does appear in large figures in any complete summary of costs.

In recent years much has been written about the economic desirability of lengthening the construction season. It has been pointed out that if workmen and construction plant are idle one-third of the time (and it averages longer) then the labor cost of construction becomes 50 per cent more than it would be were it possible to keep them continuously employed. The income of both labor and capital, in the final analysis, must be reckoned by the year and if only 200 of the



A picturesque plan which combines the house with the garage and in which the dining room—up two steps—serves also as a stage for theatrical performances. F. Albert Hunt, architect.

ACQUAINTS YOU WITH ECONOMIES

300 available working days in a year are actually worked, the cost per diem, both for wages and for fixed charges on the construction plant is greater by one-half than it would be were the full 300 days made productive.

This economic argument in favor of continuous building construction is unanswerable, provided a day's construction cost in the winter does not greatly exceed a day's construction cost in summer. We are sure that, with fairly good roads, with modern machinery and devices, with building materials that can be safely used in freezing weather, winter building can be almost, if not fully, as economically conducted as summer building and that when consideration is given to all the elements of cost (such as labor efficiency, adequate labor supply, promptitude in delivery of materials, interest charges on the land and building up to the time of occupancy) then winter building construction becomes so clearly economic that even the most deep-set habit of aversion to it cannot survive.

It seems to us that every architect, every structural engineer, every building contractor, should submit estimates of building cost to his clients, demonstrating the real economy of all-the-year-round construction; for, after all, it is the owner who is responsible for most of the postponement of building "until

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the frost is out of the ground." The age-long habit of such postponement still grips the average layman.

The following editorial appeared in *The World* of December 6, 1923:

"The winter activity helps to account for the 35 per cent increase in total valuation named in New York City permits, for eleven months of 1923, as compared with the same period last year. We hardly need the figures, \$675,000,000 against \$496,000,000 in 1922, for the work is under way wherever one turns.

"The open winter is a factor in the situation, but careful planning accounts for more. The pressure for construction has forced almost a revolution in building. The Building Congress at Washington last spring recommended changes in building practice. Wage conditions and the demand for housing reënforced the suggestion.

"In winter, contractors can hire labor without facing the intense competition that enabled workers to exact wages far above the union scale. If winter building costs more in one way, the saving of wages acts as an offset. The result is altogether desirable. It stretches the period of employment for good workmen. It cuts down the period of unemployment.

"The greater the success of the experiment this

ACQUAINTS YOU WITH ECONOMIES

year the more probable that it will be repeated. Building-trades workers should be quick to see that winter days added to their working year means bigger and more regular incomes.

“Winter building activity weakens the plea for exorbitant daily wages to make up for a short working season, but it means a bigger yearly wage, and that is what the building trades have asked for. They have the most to gain from this industrial revolution, and it would be a pity if unreasonable demands should imperil progress in all-year building.”

There are many other ways, not generally known to the laymen, or to the speculative builder, by which the total outlay may be lessened. This knowledge is part of the architect's stock in trade. The advice and suggestions of an experienced architect will be found to have substantial value and his services in this respect cannot be economically ignored.

HE ENUMERATES TWENTY WAYS TO LOWER THE COST OF HOME BUILDING

MR. ROBERT TAYLOR JONES, A.I.A., Technical Director of the Architects' Small House Service Bureau, does a valuable service for prospective builders of small houses when he describes the following forty ways to lower home building costs.

"How can I build within my means without giving up conveniences and comforts—the things I want?

"To answer this question, let us face the facts squarely. You have probably been making inquiries, getting prices here and there, studying equipment and materials, and you have found that the kind of a home you want exceeds your budget by \$1500 or \$2000. Of course you insist on building a home that will be substantial and that will command a high price if it should become necessary to sell. In other words, you want to build an asset, not a liability. You want to have a home you can be proud of, soundly and well constructed.

"But it is not a question of what you would like to have. It is a question of what you can afford.

TWENTY WAYS TO LOWER COST

At the very beginning, you are faced with this obstacle of a limited budget.

“You are obliged to select materials and equipment whose initial costs will come within your means. Your problem therefore is to determine how you can reduce accommodations, what materials and equipment can be scaled down, particularly in quantity, and not interfere essentially with service and good architecture. This can be done, and you can have your home if you have the courage to face the facts.

“Almost any sum can be paid for a small home. This is a very strong statement, but it is absolutely true. The differences are due to the market conditions of various regions of the country, and also to some extent to the varying profits that contractors make.

“A \$6500 home is not necessarily inferior to a \$10,000 one in so far as comfort is concerned. They might cost these different sums erected side by side by the same contractor, and the extra cost of the \$10,000 house would then mean that some home builder had demanded too many high-priced items. And he had to pay for it.

“In general there are only two factors in erecting any kind of a building at decreased expense. The first is to get a contractor through competition who will agree to build your home at a fair price. The

ECONOMY IN HOME BUILDING

second and perhaps the most important factor is to reduce the number of your requirements at the start. There are no others.

“In selecting a contractor, take bids from a number of them. This method is an old and well-established practice. It simply amounts to bargaining to find out who will give you the most satisfaction for the least money.

“Generally speaking, the best form of contract for a home builder is the one known as the ‘general contract’ in which one single contractor builds the major portion of the home. The contracts for heating, plumbing, and electric wiring and fixtures are, by this method, given to subcontractors. Your general contractor is thus made responsible for turning over the completed building to you in acceptable condition, and you have one person only to look to for the completion of the work and the correction of errors.

“When there is great uncertainty about the total cost of materials and the contractor is unable to tell you exactly what the total cost of your home will be, the ‘cost plus fixed fee’ form of contract is occasionally used. This scheme provides that you pay directly for labor and materials as they go into the building, the bills for which the contractor must regularly present to you. You pay the contractor an

TWENTY WAYS TO LOWER COST

additional agreed-upon sum for his profit. This is usually not a good scheme. Just remember the high cost of governmental building during the war, much of which was done at 'cost plus a percentage.'

"A third method of building is by the 'day labor' scheme in which you let all of the many subcontracts for the work yourself. This is generally not a good scheme, for it eliminates the skill of the general contractor. Unless you are familiar with the buying of materials and the directing of labor and are willing to assume the many difficulties that invariably arise in building, we warn you not to try this method.

"Make a very careful selection of your contractor, after inquiring about all the reputable ones in your locality. Remember that the lowest bidder will not necessarily save you the most money—quality has to be taken into account.

"But the second and more direct way for you to decrease costs is to reduce your requirements. By this we mean that you should in the beginning ask only for those things for which you are in a position to pay. A house of five or six rooms can easily be made to cost from \$1000 to \$2000 more than the average, so that you must decide just what equipment you can afford at the start and to what limits your purse will permit you to go.

"This means that you must study the drawings

ECONOMY IN HOME BUILDING

with great care. Eliminate what you do not need in order to live in your house—partitions, porches, fireplaces, attics, cellars. Get down to the basic facts.

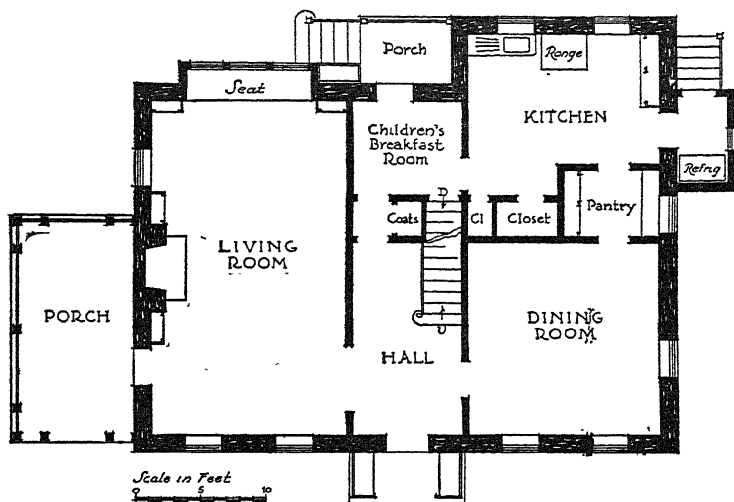
“Then you must study the specifications. Almost every clause of this document charges you with a liability to pay. You can’t just call for wooden floors. They must be of oak, pine, maple, or other material. And if of oak, then what one of the five different grades?

“You must not select a material of poor quality or attempt to save at the cost of sound construction. That would be fatal.

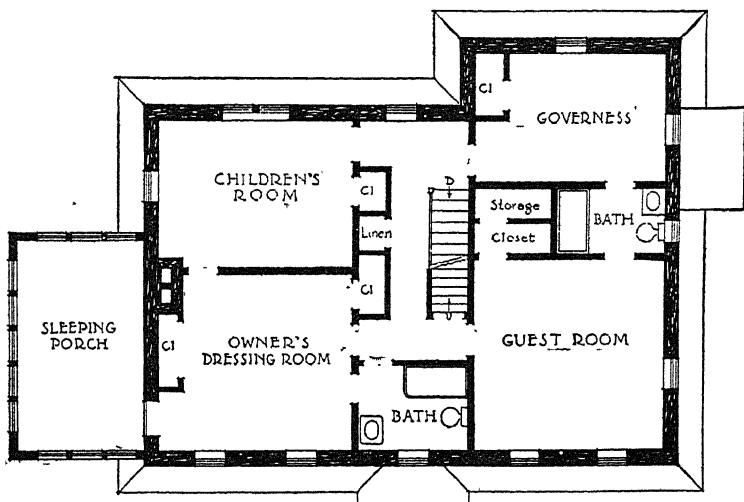
“Please remember as you go over the following list that the values given are approximate. You will have to verify them for yourself in your local market, as the prices will vary in different localities. The figures given are about the average experience you could anticipate in building a small house of two stories of about 750 square feet ground area. And the principles on which these suggestions are made consist of—first, omit at the start what you can install later on; second, compare costs; third, practice true economy by using only durable materials.

“1. You do not absolutely need basement partitions. You can put them in at any time yourself. Enough to enclose the fuel bin will be sufficient for

TWENTY WAYS TO LOWER COST



A simple, straightforward plan, although obviously arranged to meet special conditions required by the owner. Henry H. Saylor, architect.



Unusual conditions have been nicely complied with in this plan. Henry H. Saylor, architect.

ECONOMY IN HOME BUILDING

a start. You may save from \$50 to \$150 by omitting these partitions.

"2. The fireplace has been called the heart of the home. Nevertheless a home will run pretty well without this heart. If you will leave it out, the lowered cost of labor and material may amount to \$300 or \$400—perhaps even more.

"3. Many wooden houses are improved by the appearance of a brick base course. A stucco house should have some kind of masonry course at grade. Also, the higher the course, the more it will cost. You may save from \$50 to \$150 by handling this matter very closely.

"4. Perhaps the very first thing to omit when you are cutting down absolutely to essentials is the porch. This can be added any time. The cost ranges between \$300 and \$600 or more, depending upon the design and size.

"5. Glazing in a porch is expensive, for it requires not only the extra window sash but interior trim, painting and a different and more expensive kind of flooring than is used on an open porch. The whole additional expense may run as high as \$500. You can do the glazing of the porch later on when your funds will permit you to do so.

"6. Screening the porch is an extra expense. Double screens for the windows cost more than the

TWENTY WAYS TO LOWER COST

single ones. Metal screens cost more than those of wood. The wire used in making screens is made of painted steel, galvanized steel, copper, or bronze. Buy the grade of screen you can really afford.

"7. The Building Code Committee of the United States Department of Commerce has investigated foundations for small homes and has found as a general proposition that a well-built nine-inch foundation wall of brick or concrete will do excellently. You can decrease costs by using this thinner wall, provided it is very soundly constructed.

"8. The prices for brick, poured concrete, concrete blocks, or wall bearing tile for foundation work vary with the market to a considerable extent. Brick costs less than concrete in some districts, concrete is less expensive in others, and so on. Poured concrete as compared with concrete blocks may be had at different prices, depending upon conditions in the market and at the building site. You can easily save a considerable sum on this item by seeing what these conditions are.

"9. It has become quite the normal thing to run a full basement underneath the house. This involves deep foundation walls and an extra expense for excavating. You do not absolutely have to do this. The saving involved in omitting the basement may amount to \$600 or \$800—often more. You may put

ECONOMY IN HOME BUILDING

in the cement basement floors later on, if you cannot afford them now.

“10. If the basement excavation is in clay, perhaps you can use the excavation cut for one side of the concrete forms. There would be a saving in doing so. Some building codes, however, do not permit this. If the work is well done it is nevertheless quite satisfactory.

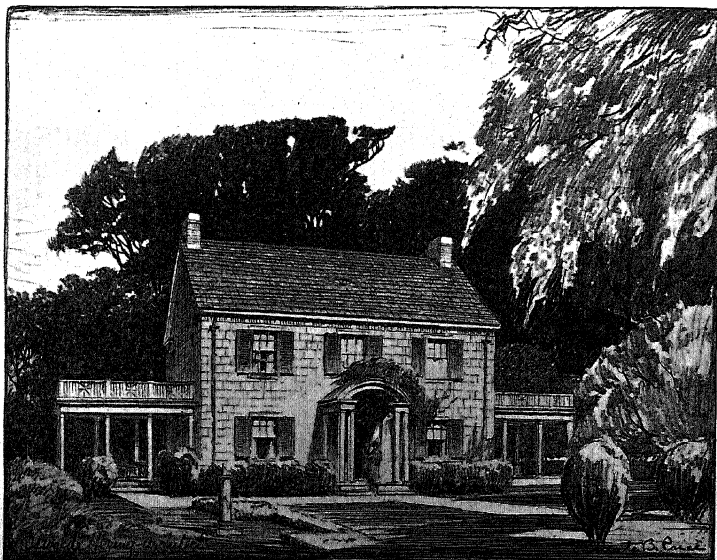
“11. Tile is desirable for the bathroom floor, but it may cost from \$25 to \$50 more. An increased expense is involved in a tile cove.

12. If you stucco the exterior of your house, be prepared to pay from \$150 to \$250 more than for wood siding. If you build of brick the initial extra expense may run from \$400 to \$800 more than for the average wooden finished house. Remember, however, that a home finished with exterior walls of masonry gives you a better fire insurance rate and it does mean a great saving in painting in the future, besides lessening depreciation. Even though the initial cost of permanent materials is more, the final cost is less. You may not have the capital for a building of this class when you begin to plan your home.

“13. Wooden shutters at your windows may cost from \$50 to \$100. Do not think of these as being merely ornamental. They have a real usefulness, especially in summer time. You may, however, in-



This house can be built for from \$9,000 to \$11,000, depending upon local conditions. Oswald C. Hering, architect.



This house can be built for from \$12,000 to \$15,000, depending upon local conditions. Oswald C. Hering, architect.



In developing suburban property, comparatively small plots are sometimes an economic necessity. In that event the houses should be restricted to one style of architecture. The community will then present an appearance of friendliness and congeniality. Oswald C. Hering, architect.



Where suburban houses must be placed close together, it is better to stick to one style—in which there can be innumerable variations to avoid monotony. An economic feature of the houses illustrated above is that while the plan of each is identical the façades differ, although all belong to the “Colonial” family. Oswald C. Hering, architect.

TWENTY WAYS TO LOWER COST

stall these shutters later on when your finances will cover this outlay.

“14. The initial cost of plain wood shingles for roofing is generally less than that of other materials in unit form, such as tile, slate, etc., although in some cases they are less durable and less fire resisting. Fire laws in some localities require that you use these other types of roofing materials. There are variations in price and quality for each kind. High quality counts heavily, but do not attempt to buy variegated tile with a wood shingle pocketbook. If you have wood shingles brush coated, be prepared to pay from \$25 to \$50 more. If the shingles are dipped the expense will be increased, but the durability will be increased. It is better to omit such items as the porch, which can be added at any time, thus saving many hundred dollars, and to spend this money in better materials generally throughout the house at the start, including the roofing.

“15. Wide siding costs more than narrow siding. Various kinds of woods used for this purpose cost different sums. Ready stained shingles used for the side walls of frame houses usually cost less than wide siding. Adjust this item to your pocketbook.

“16. Fire stopping in frame walls is recommended by the National Board of Fire Underwriters. It is designed to reduce losses by fire in these buildings.

ECONOMY IN HOME BUILDING

Installation of the fire stopping material involves an expense of from \$75 to \$150. Whether or not you may omit it depends upon the location of your building with respect to the fire limits and the extent of your home-building budget.

“17. We are especially interested in good construction and earnestly recommend that you insist upon it if you hope to make your dollars buy full value. In this connection all exterior wooden walls should be insulated, for this precaution serves equally well in hot and cold weather. You cannot afford to omit this material in regions of severe winters. An expense of \$75 to \$150.

“18. Built-in fittings in the kitchen may cost you from \$100 to \$300, depending upon their design and extent. It might be less expensive for you to do without these, at least temporarily, substituting therefor one of the ready-made devices of this kind. Unless the built-in fittings are extremely well designed, the ready-made kitchen cabinets are preferable and they may cost you less money.

“19. Extra bookcases, wardrobes, china closets, open stairways, etc., cost heavily, especially when means are limited. The actual amount involved would depend on how much of these things was to be used. And you can always buy them later when you can afford it.

TWENTY WAYS TO LOWER COST

“20. A built-in refrigerator with waste and platform is more expensive than a separate refrigerator not so advantageously equipped. You may save from \$25 to \$50 on this item.”

HE REVEALS TWENTY MORE WAYS

“**P**ERHAPS you do not need to finish all the rooms just now,” continues Mr. Jones. “Omitting the plaster, finish flooring and wood trim in rooms to be finished later will save something. It would be cheaper in the long run to have all the work done at once, but your ready funds may not permit it.

“Stock moldings, kitchen cabinets, doors, and sash cost less than devices of this kind made to special designs. If you are trying to cut down costs to a minimum see what your contractor can get from his local lumber dealer’s stock. Special millwork will cost you a great deal more.

“Hardwood floors naturally cost more than soft wood. In every kind of wood there are various grades with varying degrees of expense. For example, as between the first and second grades of plain oak flooring, there may be a difference of \$50 or more in the cost of building your home. The medium grades are durable, and if the millwork is well done, and you have good workmanship with good painting, staining and filling, the appearance will be fine.

HE REVEALS TWENTY MORE WAYS

“The cost of wood trim varies, as does the cost of flooring. Soft wood is less expensive than hardwood for interior finishing. Soft woods such as fir and pine can be used to advantage and at a saving, especially if they are painted. Some of the inexpensive woods, such as cypress or poplar stained or oiled are very beautiful. As between hardwood and soft wood trim for your home there may easily be a difference of \$150.

“When you have the woodwork finished, think about the relative expense of stain and varnish, painting, and enamel work. Stain and varnish will, on the average, cost less than paint. Paint costs less than enamel. There may be a difference of \$100 or more in the last two methods. If you enamel only part of the house and paint or stain the remainder, your expense will be decreased proportionally.

“Mirror doors, double strength ‘A’ quality glass, and plate glass vary in cost. Get comparative costs before you buy so that you get what you can really afford.

“A clothes chute is not an absolute necessity. It is properly built of metal. It costs \$25 or more.

“In selecting your plumbing fixtures you will find that you can have these made in several materials—namely, vitreous china, solid porcelain, or iron

ECONOMY IN HOME BUILDING

coated with enamel. Chinaware is more expensive than enameled iron. It has certain advantages in the way of appearance and ease of keeping clean, but the enameled iron is also durable. Closets are obliged to be made of vitreous chinaware.

“All plumbing fixtures are made in many designs. Your plumbing dealer can show you these. As far as efficiency is concerned they will all work. The difference is mainly in appearance.

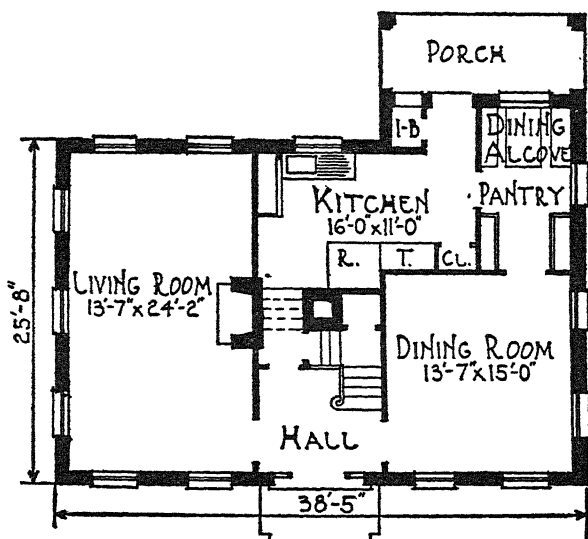
“A recessed bath tub will cost you from \$35 to \$50 more than a simple leg tub. Observe the different materials and designs in which this equipment is offered. There is a wide range of expense.

“Solid porcelain lavatories cost more than the enameled iron ones. There is an item of approximately \$25 to \$50 here. The ‘pop-up’ type of lavatory waste costs from \$3.00 to \$5.00 more than the chain and plug device.

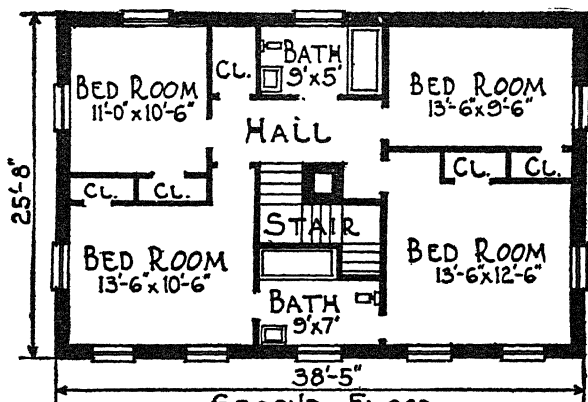
“There are a great many types of water closets, tanks, and seats. The simple ones are satisfactory if well made. You can save \$25 to \$50 by selecting a simple and economical fixture of this kind.

“The kitchen sink is usually made of enameled iron. Sinks with aprons or with drain boards cast on are more expensive than those without either or both of these. A wooden drainboard is less expensive than one of enameled iron. Combination hot and

HE REVEALS TWENTY MORE WAYS



FIRST FLOOR



SECOND FLOOR

Floor plans of the replica of the Payne house—made under the direction of Donn Barber, architect. Everything needed seems to be well provided in this house. There is some unnecessary waste space in and just outside the largest bedroom. This space could be better utilized by a different arrangement of the closets. The large bedroom would then be the same size as the dining room.

ECONOMY IN HOME BUILDING

cold water faucets will cost from \$5.00 to \$6.00 more than separate faucets.

“In the laundry you may spend various sums for tubs, depending on what they are made of and their size and number. You can pay much more for one type of water heater than for another. Get the best you can really afford.

“There are items of expense about the heating plant which you must consider. Personal preferences are usually quite fixed in regard to the kind of heating system that must be used, but you may not be able to buy the particular kind of heating system you prefer. In order to have your house you must be prepared here, as elsewhere throughout the building, to take what you can afford to have. But do not buy a cheap heating device of any kind.

“A heat regulator is a very desirable device. It will assist in decreasing your fuel cost, although it may be outside of your available funds. It costs from \$50 to \$160.

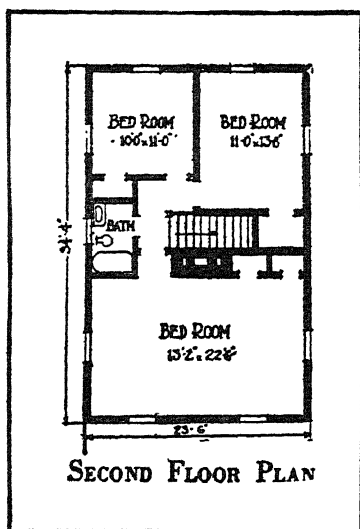
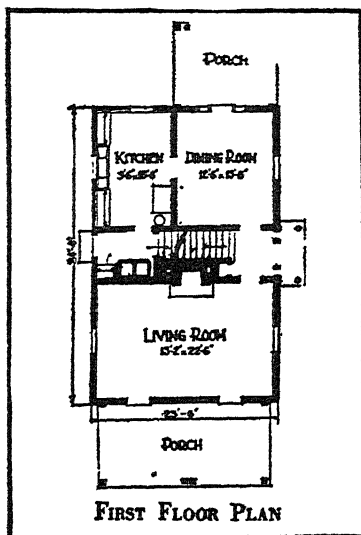
“There are many forms of radiator valves—the leak-proof type, indicator type, and others of a more simple kind. Compare costs.

“The high type steam or hot water radiator costs less than the low type, but the former cannot go under windows. Even so the high radiator is very

HE REVEALS TWENTY MORE WAYS

efficient. You are the one who must decide and who must pay the bills.

"The quality and degree of insulation you use on the heating pipes have a direct influence on the initial



Floor plans of the Herald Tribune Model House No. 6. The absence of a linen closet and very tiny coat and provision closets appear to be the only drawbacks to this plan, which is nicely balanced and most economical. John Floyd Yewell, architect.

costs. Get a good job here even if you have to wait for it.

"Your finish hardware and electric fixtures may represent an expense to you ranging between two and five per cent of the total cost of building. For

ECONOMY IN HOME BUILDING

a \$6500 house that would be the difference between \$130 and \$325.

"The above are some very practical ways to assist you in reducing the cost of your home. If you will go over each one (preferably with a competent local architect to help you), and see how you can make it apply to your building, and then if you will learn from your contractor the amount of money saved by each one, you will see just what the total sum saved amounts to. Your saving will range between \$1000 and \$2000. Be sure to cut out the nonessential things first, the things that can be replaced later on. But never reduce qualities or workmanship to the point where durability is threatened."¹

Mr. Jones gives sound advice, and presents it in a practical and comprehensive form. Much that he recommends applies to large and more costly structures. There is one point, however, which I think he has missed and that is—the best way to contract for the building. He seems to favor the method of employing a general contractor—disapproving of the "cost plus fixed fee" form of contract, and the "day labor" scheme—in which, he says, "the owner lets all of the many subcontracts" himself. The best and most approved method is to "let all of the many sub-

¹ For some underlying principles in regard to the "Small House" problem, see the author's "Concrete and Stucco Houses."

HE REVEALS TWENTY MORE WAYS

contracts” through the architect. In other words, the architect is best equipped of all to perform the duties of a general contractor. And as the general contractor usually expects at least a 10 per cent remuneration for his services and the architect asks only a 4 per cent addition to his regular fee for this service, the owner can save 6 per cent by employing the architect to do the work of a general contractor. I have many times proved this in my own practice, and its truth is recognized by architects of standing, as is shown by the following resolution adopted by the American Institute of Architects in 1913, at the New Orleans Convention, and subsequently printed in a decorative form so that it could be framed and hung upon the walls of an architect’s office. The resolution is as follows:—

“Resolved that the American Institute of Architects, in convention assembled, recommends to the members of our profession the adoption of the practice of direct letting of contracts for mechanical equipments, such as heating apparatus, plumbing and electrical equipments.

“This recommendation is based on the conviction that direct letting of contracts, *as compared with subletting, through general contractors*, affords the architect more certain selection of competent contractors and more efficient control of execution of

ECONOMY IN HOME BUILDING

works, and thereby insures a higher standard of work and, at the same time, serves more equitably the financial interests of both owner and contractor."

Nor can I accept Mr. Jones's suggestion (No. 2) that a home can be run pretty well without a fireplace. A house can—but not a home. Better not build a home at all, unless you can afford the joy of a living-room fireplace, large enough to burn wood logs of generous length. And in recommending the use of stock moldings and kitchen cabinets, and doors and sash of stock design—care should be taken to patronize only those mills which turn out products designed in good taste. Some mills employ architects to design stock moldings for them—and these are often fully equal to the special designs ordinarily made in the architect's office for a particular job.

Much of the charm of the house lies in its carefully designed trim, doors and other woodwork. The owner does not always realize what it is that leads him to express himself favorably or unfavorably of a house. Often it is the taste, or lack of taste, exhibited in the moldings of the trim and the paneling of the doors.

HE ENLIGHTENS YOU ABOUT ESTIMATES AND BUILDING COSTS

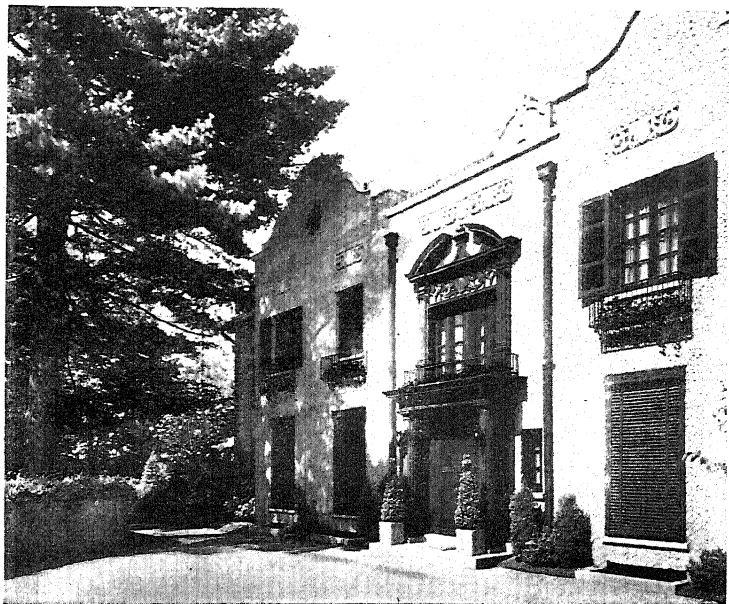
AT the very beginning of their relations, there is apt to be a misunderstanding between the architect and his client—which leads to embarrassment, distrust and sometimes to a lawsuit. It is caused by the question which is usually propounded by the client at their first interview. A few moments after giving the architect a sketchy word picture of the building he wants, he suddenly asks, "What will it cost?" The young and inexperienced architect is apt in his enthusiasm to make a hasty calculation based on the current prices of labor and material, or more often on the prevailing price per cubic foot. Even the older practitioner, unless he has suffered some by experience, is tempted to comply with his client's request, and, through fear of losing the job, he puts himself on record by naming a sum that later proves to be wide of the mark.

The blame for such a situation cannot be laid wholly at the door of the architect. To be quite frank, the owner has no justification for asking such a question at that stage of the procedure. He should give the architect time to make a reasonably careful survey to enable him to study the problem before requiring him to name a sum that is worth more

than a guess. Fluctuating prices of materials, peculiarities of localities and the uncertainty connected with the price of wages may be so great that a wide discrepancy between a hasty estimate and the ultimate cost may be reasonably looked for. His experience, long and wide as it may be, does not equip the architect to prophesy the ultimate cost of a building until he has given the requirements careful consideration and has had time to check his figures. It is the duty of the architect, therefore, to make sure that he does not mislead his client, either by estimating too little or too much. For if the sum he names is less than his client has in mind, it fools the owner into a belief that he can do more than he has pictured. And if a sum is named that is larger than it need be, it may well discourage him and induce him to abandon the project then and there.

The architect is first and last a professional adviser, and he is no more qualified, and should not be asked, to state what a building will cost, after a few moments' consultation and without more than a vague idea of the problem, than a doctor is able to diagnose a case correctly and state the cost of treatment and perhaps of an operation or two after only a brief, preliminary examination of a brand-new patient.

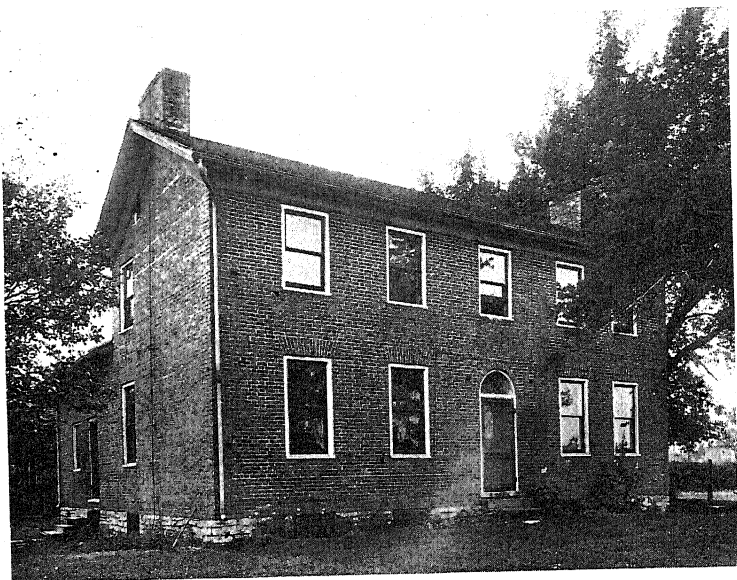
Even when the architect has had an opportunity for investigation and study, and has prepared what



One of the pioneer, reënforced-concrete, fire-proof residences in America, suggestive of the architecture of Spain. The panels above the second story windows are of cast cement with colored rosettes. Oswald C. Hering, architect.



Local tradition is reflected in this house, which was planned to be built in Connecticut. Oswald C. Hering, architect.



"The Old Homestead" at Middletown, Ohio—birthplace of
Hon. James M. Cox.



"The Old Homestead" as restored. Oswald C. Hering, architect.

ESTIMATES AND BUILDING COSTS

are known as preliminary sketches, he can do no more than give an approximate estimate of the cost of the building, and he should make it clear to his client that it is accompanied by no guarantee. He should be able to name a figure within approximately 20 per cent, however, and an experienced practitioner can generally arrive at a closer approximation than a builder. This is frequently proved by the variation in the bids later submitted by the builders, which I have known to be as far apart as 40 per cent—between the lowest and highest bid. The reasons for so wide a discrepancy are many. Mistakes in reading and understanding the requirements of the plans and specifications; errors in arithmetic; careless omissions; an urgent need of work as against indifference; and conditions which enable one contractor to secure material and labor at a lower cost than another. These are a few of the causes that bring about the submission of bids that are so surprisingly far apart.

When you say to your architect—"I want a house to have thus and so and my absolutely, damndest, last limit is \$100,000, inclusive"—give him a chance to visit the site and deliberate over your wishes and prepare some sketches. He will then be able to submit to you an approximate estimate, something on this order:

ECONOMY IN HOME BUILDING

APPROXIMATE ESTIMATE OF A COUNTRY HOUSE FOR MR. GEORGE W. HOMEBODY LOCUST VALLEY, N. Y.

Two and one half story frame construction, with shingles and blinds, of a style patterned after the Colonial. Stone or concrete foundation. Two chimneys; one porch; simple trim; hardwood floors; no wood paneling; woodwork painted and finished; serviceable hardware; bathrooms tiled; shingle roof; electric wiring; vapor heating; good grade of plumbing fixtures. The assumption is that no blasting and rock excavation will be required, and that no special provision is needed to keep out sub-surface water.

General Construction:

Cubic content	150,000 cu. ft.	\$.40	\$60,000.00
Square area	4,150 sq. ft.	13.00	53,950.00
Plus one half porch area	260 sq. ft.	14.00	3,380.00
Total of cube and square			<u>\$117,330.00</u>

One half to secure a fair average.....	\$58,665.00
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Mechanical Equipment:

	38 Fixtures, includ-		
Plumbing	ing piping ...@	\$150.00	\$5,700.00
	4 Soil stacks	@ 150.00	600.00
Electric wiring	.118 Outlets	@ 10.00	1,180.00
Heating	150,000 cu. ft.@	.03	<u>4,500.00</u>

\$11,980.00

\$70,645.00

Contractor's profit	@ 10%
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7,064.50

(Add 9% if the outside walls are built of hollow tile stuccoed)

\$77,709.50

Allowance for screens and shades

900.00

Allowance for lighting fixtures.....

1,800.00

Allowance for finished grading with top soil.....

700.00

\$81,109.50

Architect's fee	@ 10%
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\$8,110.95

\$89,220.45

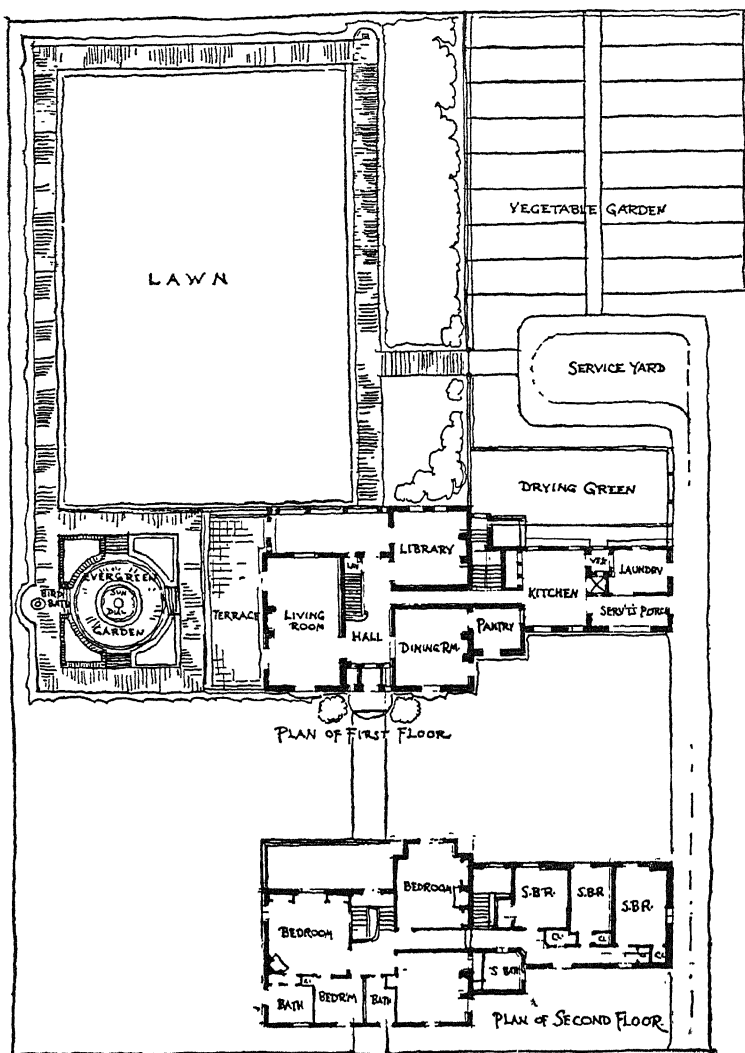
ESTIMATES AND BUILDING COSTS

A certain amount should always be reserved for the purchase and planting of trees and shrubs and, if necessary, for walks, roadways, retaining walls or fences. The treatment of interior walls varies in cost so greatly—from a cheap paper to a good painted finish or a covering of damask or paneled wood—that this matter must, in fairness, receive separate consideration.

The estimate submitted above, therefore, is approximately for \$90,000, to which must be added a sum varying according to conditions and taste to cover the cost of inside and outside embellishment as described. Apparently the architect is well within the specified limit of cost for a house of frame construction, or possibly with outside walls of masonry.

“But,” says the owner, “I want the entire house, except the roof, fireproof.” “In that case,” replies the architect, “17 per cent of the total cost should be added.” While a frank statement such as this may be a shock to the owner’s preconceived ideas, it is better for the architect to let him know the truth at the start than to lead him into the belief that he can have what he wants, and allow him to make the belated discovery that the inclusion of screens and shades and lighting fixtures and grading and walks and a driveway and the interior decorating and a forgotten garage, etc., requires a large additional

ECONOMY IN HOME BUILDING



While the architect should control the design of the® grounds which he has pictured as a fit setting for the house, the services of a landscape architect are often desirable, in collaboration. Delano and Aldrich, architects.

ESTIMATES AND BUILDING COSTS

sum, which, perhaps, he can ill afford to invest. I say it is better, advisedly. For if the owner has difficulty in paying the final bills of the contractor, the architect will have some difficulty in collecting his fee. As the architect's final bill generally represents a large part, if not the whole, of his personal profit, he should practice telling his client the truth if only from motives of self-interest.

What Mr. Goldberg might call "Foolish Question Number 2" is the owner's request to know the exact time that his building will be finished and ready for occupancy. Brave, but equally foolish, is the architect who answers him by naming a specified date.

The time consumed in building is dependent upon many factors, and in residence construction not undertaken by large building organizations there are bound to be delays of all kinds, and a day lost now and then soon totals a month. Country builders in particular are prone to be easygoing, and fail to appreciate the loss entailed by all concerned in protracted delays. The owner can understand a bricklayer's strike—but it isn't so clear to him why those bath tubs aren't on the job. It is the duty of the general contractor—or the architect, if he has the letting of subcontracts—to follow up the orders for the various materials and fixtures, to see that they are either being made or shipped. Architects, too,

ECONOMY IN HOME BUILDING

should see that their detail drawings are ready when needed by the builder. I make it a practice to submit a sheet or two of detail drawings when the plans and specifications are given out for bids. This kills two birds with one stone. It enables the bidders to see the character of the details and so estimate more closely; and when the contract is awarded and the actual work of building begins, the builder has some of the detail drawings already in his possession, which he can place with the mill, or quarry, wherever intended, and so enable him to hire his labor and begin operations promptly.

It is worse, however, so far as the house itself is concerned, to build it too rapidly and not to allow it to settle and season and become thoroughly acclimatized, particularly when wood construction is employed. From seven to nine months is a reasonable time to allow for the construction of country houses costing from \$25,000 to \$50,000 and a longer time for more elaborate and costly buildings, while small cottages and bungalows, if of simple construction, may be completed under favorable conditions in four months' time.

A most interesting and enlightening brochure has been prepared by Mr. Maurice I. Flagg, Director of Service for the Architects' Small House Service Bureau of the United States. This Bureau is a na-

ESTIMATES AND BUILDING COSTS

tionwide organization of practicing architects from leading offices of the country. It is controlled by the American Institute of Architects and endorsed by the Department of Commerce of the United States Government of which Herbert Hoover is Secretary. "From one end of the country to the other," writes Mr. Flagg, "our cities and towns are cluttered with wasteful, unattractive, poorly planned homes—homes that appear to be the product of amateur planners who sail blindly ahead with the notion that home planning and building require no special knowledge. The pitiful part of these homes is not only their sad appearance, but the unjustified waste of money they represent.

"The planning of the smaller home is a peculiarly difficult problem. Many of our best known architects, prominent men in their profession, admit they would prefer to design a skyscraper rather than a small house. The reason for this is clear. To provide all the comforts and conveniences demanded within limited space and funds requires the utmost skill, patience and supervision of the architect. Yet in spite of this fact, thousands of home builders are willing to take chances, go it alone, and depend upon 'rule of thumb' in planning as well as construction.

"It is easy to see that the time involved in planning the smaller home amounts to almost as much as for

ECONOMY IN HOME BUILDING

a larger dwelling. Certainly the architect who undertakes such a job must give to it the sum total of his many years of experience. He must charge for this service in proportion to the size of the job, and this charge may amount to \$400.00 or \$500.00 on a four or five-room house.

“Often the builder feels that so large an initial expenditure for plans and architectural service is more than he would care to pay, much as he may appreciate the need and worth of this professional assistance.

“The gap which for years has separated these home builders and the architect has been mainly responsible for the thousands upon thousands of drab, dreary, monotonous small dwellings that line our cities and towns.

“Common sense indicates that it takes no more labor, lumber, bricks, cement, stucco, shingles and paint to erect and finish a small home in good taste, with sound construction and safe investment, than the commonplace ‘Jerry’ built home, which, because it lacks these very things, is wasteful and little better than a shack or packing case. The difference, however, soon appears when the house has been lived in for a time, or when you wish to realize on your investment.

“Consider this proposition in terms of dollars and

ESTIMATES AND BUILDING COSTS

cents. A designer recently said, 'I can make a piece of cloth into a dress that will appear to be worth \$50.00. I can cut the same piece of cloth and make it into a gown that will appear to be worth \$150.00. The \$100.00 difference between the dress and gown is due to the way in which the fabric is cut, the way it fits, its lines and general appearance.'

"A carpenter can also take studs, joists, doors and windows and put them together with no special distinction. For strength and service, the home may be as substantial as a fortress. An architect, however, taking the same materials, because of his special training in design, can assemble these things to give the same strength and service, but in addition your home will have excellent proportions. Because of careful adjustment of the parts your home will be a thing of beauty, a joy forever, and will cost you no more. In fact, your home will be worth more in resale value as well as worth more in personal satisfaction. And as the home is an investment, its value is measured not only by what is put into it, but what it will bring if offered for sale.

"Our country is home sick—we need millions of better built small homes, homes that are good in design, sound in materials, adequate in comforts and modern conveniences.

"To the average man home building is full of mys-

ECONOMY IN HOME BUILDING

tery. The home builder usually lacks reliable information—simple, elementary instruction and facts of a kind that will assist him to avoid mistakes and make his dollars buy full value. The decision to build your own home is, however, an important and vital step in your life, and every dollar you spend should secure you the greatest possible satisfaction when you have moved into your new home.”

NOTE: The owner should bear in mind that the smaller the building, the greater will be the percentage of cost, because the overhead costs are sometimes as high for a small building as for a large, or for one building as for two. There must be, for example, in both cases a foreman, who commands a relatively high wage. He can often take care of a large building as well as a small one, or of two buildings (if they are near each other) as well as one. Building material, too, costs relatively more when purchased in small quantities.

HE TELLS YOU HOW TO BUILD A COUNTRY HOUSE

A VAST acreage that lay neglected, or that was used for grazing, for growing timber or for raising corn, grain and farm products was brought closer to the city, and into the market for residence sites, by the invention of the automobile. This privately owned and operated engine of travel, so much speedier than the horse and wagon, has made available millions of square miles of beautiful country for purposes of residence.

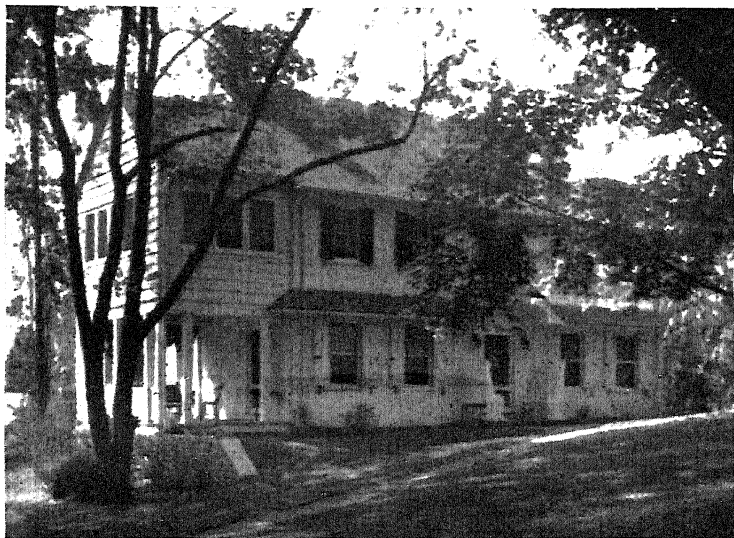
Capitalist and wage earner may now live out of sight and beyond the roar, yet within easy reach, of the busy marts and workshops of their trades and professions. And in time not very remote, when the aeroplane is perfected, millions of acres more, far beyond the present suburban and country residence limits, will be converted into homelands for the daily worker in the city. So it behooves the home seeker to weigh carefully the possibilities and probabilities of the future, before deciding upon a building site. The permanence of his job, the trend of development in the outlying districts of the city; questions of charm, accessibility, climate, all are determin-

ECONOMY IN HOME BUILDING

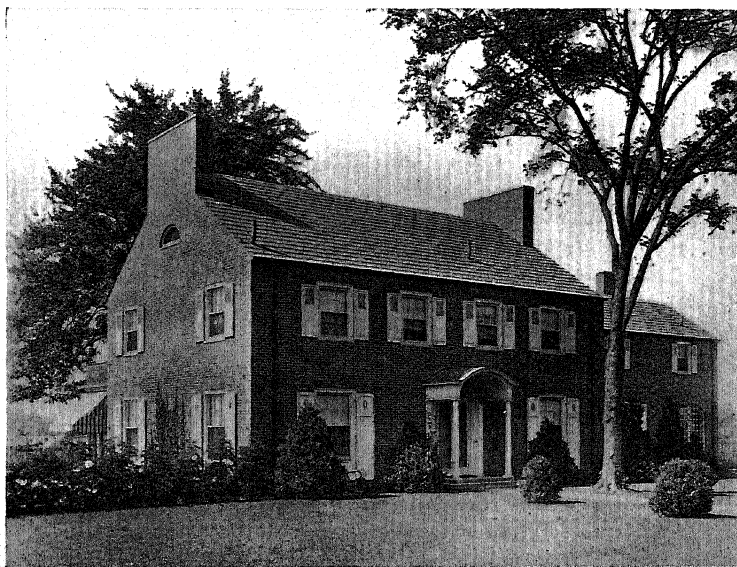
ing factors in the purchase of land for a home. When the urge and pull to the country can no longer be withstood, the first, and most inexpensive, course is to consult an architect and a realtor.

Before embarking upon any new venture with which one is unfamiliar it is prudent to consult an expert in that line. It has been a matter of interest and wonder to me to observe the recklessness displayed by some of the most conservative men, who, achieving success in their own business or profession, plunge blindly and headlong into some new activity, without acquiring more than a cursory knowledge of its qualities, and who, not unnaturally, come a cropper.

Apparently the development of suburban and country real estate has a peculiarly gripping fascination for successful men in almost every walk of life. The records of failures and bankruptcies, from such ill-advised speculations, include prominent politicians, well-known bankers, heads of railroad, mercantile and insurance companies, doctors, lawyers, clergymen—and so on *ad infinitum*. Most of these losses, amounting in all to a colossal sum, could have been averted and turned into profit, and in some cases fortunes made, had these cocksure promoters taken into their confidence and partnership reputable and experienced representatives of a business and a profession



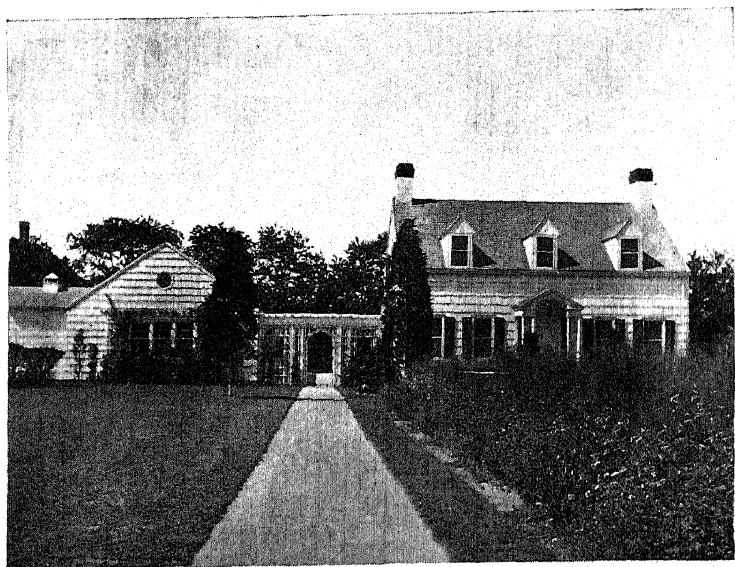
A house in Pottstown, Pa., where "Dutch" Colonial traditions abound. The "Germantown hood" makes a pleasing horizontal line and affords protection to the windows. Henry H. Saylor, architect.



A small brick suburban house, expressed in truthful, simple and dignified terms of architecture. Delano and Aldrich, architects.



A typical Long Island farm house. Alfred Hopkins, architect.



A cottage in a group of farm buildings. Alfred Hopkins, architect.

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who know how to play the game of rural real estate development—the realtor and the architect.

Your first move, then, Mr. Homebuilder—if you believe in safety first—is to invite the coöperation of two gentlemen experienced in these two lines of endeavor. Ask them to lunch, for a preliminary talk, and after outlining your ideas on location and the type of house you have in mind, you will probably find your guests able to give you some sound advice that will start you out in the right direction and save you many hours of fruitless journeying, and search, and enough money to pay a good part, if not all, of their fees.

Assuming that a certain property fulfills the conditions named, and discloses a suitable site for the house, the garage and other outbuildings, and that the conformation and contours of the ground insure a firm foundation, good drainage, pleasing outlook, desirable frontage with respect to the sun and summer breezes, and protection from the storms of winter; that the title is clear and the neighborhood such as to afford protection against undesirable encroachment—you close the deal and buy the land. Here you may bid a courteous adieu to your realtor friend. Enter now the architect. That is to say, this gentleman has been present at the conferences, playing more or less the rôle of a liaison officer, making sug-

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gestions and offering advice. But with the purchase of the property the architect should take command.

In the earlier chapters, I have described the process of getting acquainted with the architect and the preliminary steps to be taken in the preparation of the first sketches. We will assume that the plans have been approved and the working drawings and specifications are almost to be started. Practical questions of construction must now be agreed upon before any further progress can be made.

In order that your house may not settle unduly, and perhaps sink into the earth's bowels, a sufficient test of the subsoil should be made to ascertain its character and sustaining powers before any foundations are laid. The layman, particularly if he is of a religious turn of mind, is apt to assume that a house built upon rock will be more lasting and desirable than a house built upon sand. In one sense he is right—in another he is wrong. Rock, undoubtedly, makes a firm footing, but when it is in the form of a ledge or consists of large boulders, it must frequently be blasted for cellar space, and sometimes the blasting disturbs a hidden spring, which requires the foundation walls and the cellar floor to be waterproofed to keep out water. And waterproofing is apt to be expensive. Even if no springs are unearthed, a ledge or boulder which slopes, below the surface

HOW TO BUILD A COUNTRY HOUSE

The Innocent Young Thing - - - - By H. T. Webster



If this little group of serious thinkers had given their architect sufficient time to study the problem and prepare adequate plans and specifications before breaking ground, the chances are that a good laugh would have been missed.

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of the ground, towards the house, will carry surface water against the walls and penetrate them. Surface water, draining towards the foundations of a house, has a surprisingly heavy pressure, and extra strong and thoroughly waterproofed walls are needed to keep a cellar free from dampness and flood when subjected to its force.

Right here it might be well to emphasize the need of giving a slope of at least half an inch to the foot to the finished grading—away from the house walls on all sides—for a distance of a dozen feet or more. Otherwise a wet cellar is likely to follow in the wake of a rainstorm. Many an architect has been obliged to bear the brunt of the owner's fury when, shortly after the house is occupied, a heavy rainfall floods the cellar. The owner generally jumps to the conclusion that the foundation walls are defective, and he blames both the architect and the builder for carelessness or bad workmanship. Unpleasant hours are endured until a meeting is held on the ground—and then in a hundred cases out of a hundred it has been my painful duty to prove to the owner that his damp, or flooded, cellar is directly due to the settling of the filled-in ground, which forms a pocket adjacent to the wall. This depression holds the water against the wall, forcing it, for want of another outlet, through the wall. I then suggest to my client, as

HOW TO BUILD A COUNTRY HOUSE

gently as possible, that he call up my confrère, the landscape architect (or that more expensive individual, the nurseryman or landscape gardener, whoever has been employed to do the finished grading) whose duty it is to take care of the grading problem.

Sand, of course, is often a treacherous substance, but in spite of the Bible it may make a better foundation than rock, if the sand is closely packed and if broad footings are used. For sand is an excellent drain.

Hard-pan, a compact clay, makes practically as strong a foundation as rock, but it is so dense that it holds water, and so provision must be made to drain all surface or underground water away from the building.

Gravel is by all odds the best foundation for a country house. It is sufficiently firm, yet porous enough to be a perfect drain. Furthermore it is a small gold mine—for the gravel, excavated for the foundation walls and cellar, may be mixed with cement to form the foundation walls, saving a considerable item of expense.

Concrete foundation walls should vary in thickness from eight inches upwards, depending upon the load they are required to carry. Foundation walls may also be built of rubble stone, and in a country where the soil is mainly clay, filled with loose stones and

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small bowlders, it may be less expensive to build the walls of rubble than of concrete, particularly if the gravel for the concrete has been imported.

Endless discussion can be indulged in over the various excellent materials which can be used in building the superstructure. The decision may be governed by local custom, cost, color, the owner's preference in the style of architecture, and the value of importance he places upon durability.

If we can be said to have any American style of architecture, it is the style of the Colonial and Georgian periods, which prevailed in the early days of our country's life, but even these were imported from England. The Neo-Greek style, which appeared in this country early in the nineteenth century, is the more truly representative American architecture. The white boarded and shingled houses of New England, the rubble stone dwellings of the Middle States, often covered with stucco, and the brick mansions of the South enlivened with white marble or white painted wood columns, cornices and lintels are of these styles, and are familiar landmarks to all who have traveled and visited in these sections of our country.

Generally speaking, the wood framed house is the least expensive. But wood must be painted in order that it may be preserved for any great length of time.

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And this need of painting is a perpetual, if not a very great, annual expense. There are many such houses still standing in New England, covered with the original shingles, which have received so many successive coats of paint that the paint approximates the shingle in thickness. They have defied, and withstood successfully, the wear and tear of wind and water. But luck only saves them from destruction by fire.

Partial fire protection may be given to wood houses by providing fire stops of brick, or concrete, placed on wood blocks, nailed between the studs of the walls and partitions, and at floor levels. Sheetrock, or metal lath in place of wood lath (to receive the plaster) acts as a fire retard. Stuccoing the outside walls, or veneering the frame with brick, and covering the roofs with slow burning shingles, such as California redwood, affords some protection from flames on the outside. But at best, the wood house is in danger of being consumed by fire at any moment.

Do not, however, make the mistake in believing that if the outside walls of a house are built of brick, stone, concrete or any other form of masonry it is necessarily fireproof. Just so long as the floor beams and partitions are built of wood, such a house is liable to burn almost as rapidly as an all-wood house. The blackened masonry walls may be left standing, but

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often they are so badly cracked and injured that they cannot be safely used in rebuilding the house.

To insure protection against destruction by fire, the structural parts *throughout your house* must be—at least up to the top floor line—of fireproof materials. A sloping roof on such a house built of wood rafters and covered with slate, or tile, will, however, be in little danger of fire from within, for it is generally too isolated to be reached by the flames.

Having settled the question of foundations and the materials to be used in the superstructure, and assuming that the style of architecture and general arrangement of the rooms have already been agreed upon, there remain to be determined the mechanical equipment and the surface finish.

No equipment is of more importance than plumbing, for it may mean life or death, depending upon whether it is good or bad. It should therefore be of the best, in so far as workmanship is concerned, and the materials employed should at least be of standard makes and sizes; and wisdom suggests that they be better and more generous than the standards. For example, you have never known the heights of joy to be reached in taking a tub bath until you have drawn the water through a one-inch pipe, instead of a half-inch pipe, and have let it run out through a two-inch waste, instead of a one-inch waste. Yet

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the smaller pipes are those commonly approved and used. And how often have you stood cursing at the washstand, consumed with a violent morning thirst, while the cold water faucet spent five minutes dripping a gallon or two of warm water before it justified that word "COLD" on the china handle? A small pipe, and crossed hot and cold pipes, are the reasons for these disturbing phenomena. Given sufficient force, one-inch supply pipes and a distance of not less than four inches between any hot or cold water pipe and no such distressing incidents will occur.

At the present day brass pipe is not so very much more expensive than iron pipe. There is no better insurance against a steadily diminishing flow, increasingly rusty water, ending in calamity fifteen years hence (when the corroded pipes begin to burst) than to require all water pipes to be brass.

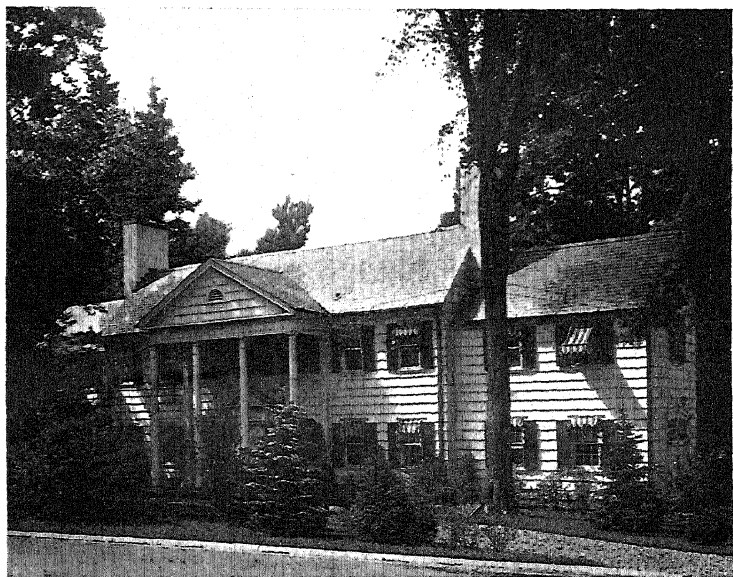
There is a great variety of plumbing fixtures, all good and to suit any taste. White seems to be the popular color scheme for bathrooms because it is supposed to be sanitary, which it is—if it is kept clean. My own preference is that the floor, at least, shall be of colored tile, for it does not show foot marks and soil from shoes. Even in the best regulated families these are not instantly removed. A little color on the walls, and on the ceilings, too, is, to my notion, a more comfortable environment for nakedness, espe-

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cially on a cold winter's day, than the frigid embrace of ivory white.

Most men prefer a shower to a bath tub. The cheapest way to install a shower is to place it over the tub, with a rod and curtain to prevent the water from flying about the bathroom. When a shower is desired in a place of its own, care should be taken to provide a pan—preferably of copper—under the tile floor, or shower receptacle, with a drain sufficiently large to insure the rapid outflow of the water. Some men like overhead showers, but a spray from the wall is generally a better arrangement, for then it may be enjoyed by a woman—as the water does not reach and wet the hair unless the head is purposely placed in the path of the jet.

Sewage disposal—in places where there are no sewers—is an important matter for consideration. If your house is small and you haven't more than ten acres of land, two connecting cesspools, one to hold the sludge and the other the overflow, placed about fifty feet away from the house, will safely and effectively take care of the sewage at comparatively small cost. For a large house with plenty of land about, a disposal field is best. The house drain leads first to a large cesspool—built of brick or concrete—of sufficient size to hold, for twenty-four hours, a hundred gallons of sewage a day per capita. Connecting



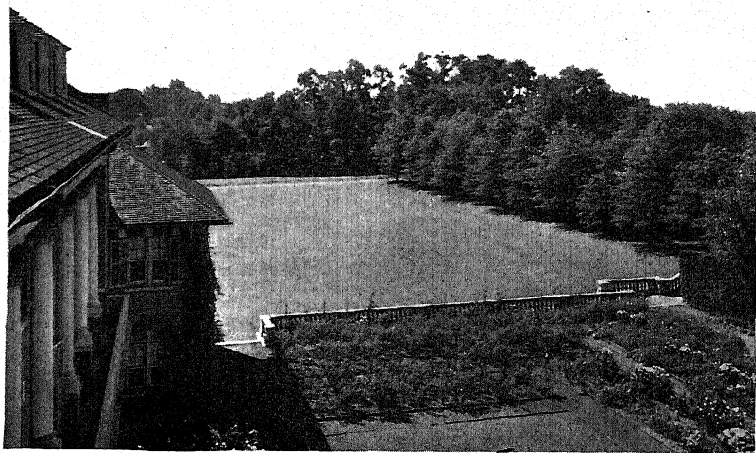
The slender two-story columns give great charm and dignity to this house.
Patterson and King, architects.



A good example of a modern "Dutch" Colonial house. Patterson and King,
architects.



The half-timbered house is especially attractive when it is long and rambling, suggesting additions made by succeeding generations. Aymar Embury II, architect.



Early environment has much to do with instilling good taste. Ely Court is an excellent example of school architecture placed in a beautiful setting. See text, page 197. Carrère and Hastings, architects.

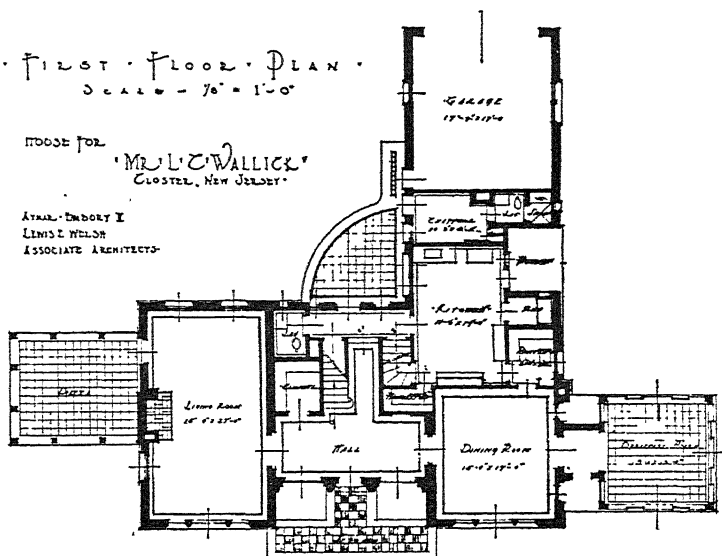
HOW TO BUILD A COUNTRY HOUSE

FIRST FLOOR PLAN
Scale - $\frac{1}{8}" = 1'-0"$

HOUSE FOR

MR. L. C. WALLICK
Closter, New Jersey

AYMAR EMBURY II
LEWIS E. WELSH
ASSOCIATE ARCHITECTS

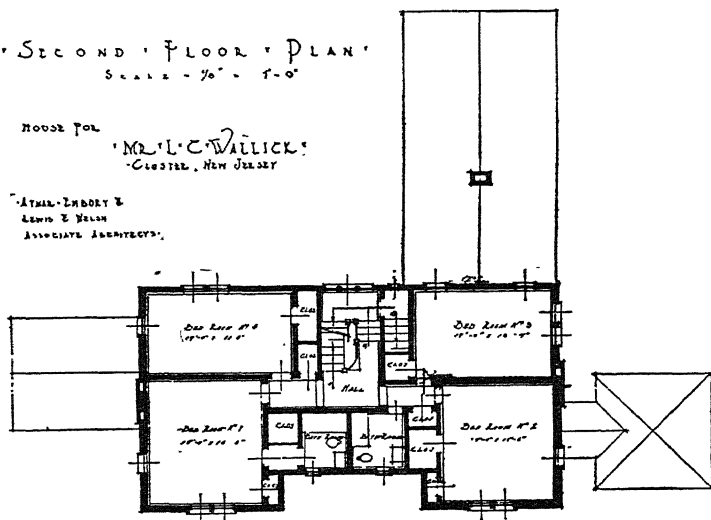


SECOND FLOOR PLAN
Scale - $\frac{1}{8}" = 1'-0"$

HOUSE FOR

MR. L. C. WALLICK
Closter, New Jersey

AYMAR EMBURY II
LEWIS E. WELSH
ASSOCIATE ARCHITECTS



A particularly attractive feature of this plan is the interesting sequence of the rooms. Aymar Embury II, architect.

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with this cesspool is a smaller cesspool which receives the overflow, and this fluid, in turn, is taken through a number of lines of open tile pipe, laid in trenches, and is carried some hundreds of feet to the filtration field. This field is composed of a series of furrows in which the liquid sewage is discharged and where it evaporates and is absorbed by the soil. If necessary, this aeration field can be screened from view by planting and growing corn in it.

There are many different ways of heating a house. Most of them are good, and all are effective, if you are willing to burn enough coal and hire an operator who understands when and how much coal to shovel in and when and how to adjust the dampers, the regulator, etc., so that you do not bake, or freeze, or the grates aren't burned out once a week. The average imported cook who lately landed on these shores hasn't as a rule, sufficient acquaintance with an American boiler to take hold and get the results advertised by the boiler maker.

The "indirect" systems are those in which the coils are placed in an air chamber in the cellar into which fresh air is introduced from the outside and heated and propelled to the various rooms through flues. They are the best systems—because they pour into a room a constant supply of heated fresh air. The inflow is easily regulated by opening or closing the

HOW TO BUILD A COUNTRY HOUSE

registers. As is the case with most things that are the best, they are expensive, at least the first cost for installing an indirect system of steam, hot water or vapor heating is considerably greater than the "direct" system popularly known as the "radiator" system. In this system the radiator either stands exposed in all its hideousness against the wall, occupying valuable space which should be given to a good-looking bit of furniture or it sits under a window, waiting to scorch your leg when *you* want to sit there and look out. This instrument of torture and abomination heats the air that is in the room, which may or may not be fit to breathe. Frequently, too, conversation, reading, or sleep is rudely interrupted by the coughing, barking, whining or sneezing of a radiator suffering from chronic high blood pressure or anemia. The old-fashioned furnace has, in recent years, been so improved that in many cases it is the best choice—for it is an "indirect" system and comparatively inexpensive.

The electric wiring should have sufficient insulation and protection to insure against the possibility of overloaded circuits and consequent fire. It is best run in rigid conduit or B. X. cable. Many people have a habit of adding new outlets to the wiring system after the original installation. A woman purchases a new lamp or a curling iron, and asks her

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husband or son, who knows just enough about tinkering to make him dangerous, to put in a new outlet. Or a man buys a new washing machine, and, without any knowledge of the capacity of the circuit, he orders an electrician to install and connect it with the system. Now if this is of open wiring, or what is technically known as the "knob and tube" system, the overloaded circuit burns through the insulation and there is apt to be a fire, if there is no other outer protection. Rats and mice occasionally gnaw the insulation off and sometimes it melts from contact with a heat pipe or chimney.

All electric wires should be run, preferably, in rigid conduit, or, if the cost of conduit cannot be borne—in armored cable. The cost of armored cable is only about 25 per cent more than open "knob and tube" wiring. In a small house the increase would amount to about \$25.00, which is a negligible sum.

The lighting of rooms is a problem that has not yet been satisfactorily solved. Light that comes from incandescent bulbs, placed behind the upper member of a projecting cornice, and that is reflected from the ceiling, is apt to be too dim for reading purposes, if it is otherwise agreeable, and too strong, if it is sufficient for reading. It is also expensive, for reflected light requires more current than direct light to produce the same amount of illumination.

HOW TO BUILD A COUNTRY HOUSE

Ordinarily, shaded wall fixtures, of sufficient number, give the most agreeable and becoming light for general illumination. Lamps are preferable for reading purposes, and the living room, the library, should have a sufficient number of base receptacles to satisfy the needs for reading, card playing, etc. The central drop light fixture over the dining-room table is not as well liked to-day as are candles placed on the table. These should be supplemented by a few wall lights to help illuminate the room. People do not, as a rule, like to eat in a glare of light. In the bedrooms there should be a base receptacle near the bed for a reading lamp, and a drop light with a silk shade is both decorative and serviceable over the dressing table, while a few wall fixtures should be placed at intervals to illuminate the room. Switches are a great convenience, and also intercommunicating house telephones, by which a servant's steps are saved.

There are numberless new inventions that may be installed in the house of to-day that provide comforts and pleasures unknown to our grandparents. Care should be taken to have their practicability demonstrated, for many of them are expensive and do not always fulfill the promise of their makers. The up-to-date architect keeps in touch with modern building material and equipment, and generally all you have to do is to make your wishes known to him and if

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you can pay the price he will rub the lamp and your wish is granted.

Roofing material should be of such character as to protect the interiors from rain and snow, and harmonize with the architecture. Care should be taken to "flash" all vertical surfaces where water will strike and run down inside the building. The gutters and downspouts should be of adequate size, and in sufficient number, to carry the water away from the house. They should be made, preferably, of copper.

The woodwork, including trim, wainscoting, mantels, doors, floors, etc., should, of course, conform to the architectural style of the house. It may be hardwood or soft wood and painted or varnished, as the case may be.

There is no end to the conveniences that may be introduced in a country house from clothes chutes to ice-making machines. The determining factor in regard to which to include, or which to omit, is generally the size of the owner's bank account.

A peculiar feature of large country houses in this country is that in houses where a great deal of entertaining is done, and rooms of generous size and proportions are consequently demanded, the owner has, in but few instances, provided proportionately small living quarters for himself and his family, to be occupied and used by them when guests are not present.

HOW TO BUILD A COUNTRY HOUSE

For a man and his wife to be obliged to dine alone in a room thirty feet wide, fifty feet long and fifteen feet high—seated at either end of a long table—and then adjourn for a demi-tasse and a cozy chat to a drawing-room of the proportions and appearance of a picture gallery in the Louvre—is one of the quickest and most direct routes to the divorce court.

A certain sum of money should always be set aside for the purchase and planting of trees and shrubs and for other landscape work. No matter how well a country house may be designed, the right background and setting is necessary to do it justice. I have seen some houses of good architectural design, standing for years, the grounds about bare and neglected, for want of enough money to dress them up. The outside of a country house needs to be furnished as well as the inside. One should be able to step off the veranda upon a carpet of turf as soft as the Persian pile indoors. Exterior decorations must be supplied by flowers and shrubs and trees to give color and form and shadow, just as interior decoration gives them, by paintings and furniture and cornices. The architect should be qualified (and the best architects are) to control and direct the work of the decorator and the landscape architect, and then be given that command. It is a mistake for an owner to engage the services of these gentlemen and allow them

to carry out their ideas independently of each other. The architect, having a comprehensive picture in his mind's eye, from the beginning, is the real composer, and for strange hands to pick up his brushes and finish the painting with colors from another palette is apt to lead, and too often does lead, to incongruities that may be tragic or amusing, but are usually in-artistic.

A home in the country is sometimes linked with a farm. In order that the charm of the landscape may be heightened, instead of marred, and the successful operation of the farm insured by the practical planning and disposition of the farm buildings, the services of an architect are as needful in designing the barn, and the silo, and the stable, and the poultry house as they are in the family residence, the lodge or the gardener's cottage. "What!" exclaimed a friend of mine. "Pay an architect to design a chicken coop?" Yes, and the pig sty, and the smoke house, and the little stone bridge over the brook, and the rustic shelter at the end of the woodland path—yes, even the dog kennel.

After finding your place card at a dinner and allowing your eye to roam over the tasteful and perfectly appointed table—would your pleasure be enhanced and your appetite improved by the discovery of a stain on the white damask cloth in front of

HOW TO BUILD A COUNTRY HOUSE

your plate? Every part of a country estate, or of a suburban plot, should receive careful and intelligent treatment. All structures of every description should be designed in harmony with their surroundings, practically placed, and pleasingly grouped, if the whole picture is to have repose and charm and worth.

HE TELLS YOU HOW TO BUILD A SUBURBAN HOUSE

THE statisticians say that in the race for the biggest number of laughs the jokes about the suburbanite have practically left that one-time favorite—his mother-in-law—at the post. Be it as it may, I shall always have a grateful and kindly feeling for the denizen of that Saturnalian ring which separates the sphere of the city from the great open spaces. And furthermore he compels admiration because of his spirit of sacrifice. For every commuter has babies, and in the correct belief that children are at least entitled to a square deal—and lacking the means to bring them up in the country—Dad buys his family a 100 x 200 plot in the suburbs, which is plenty big enough for a twelve-room house, garage, lawn and garden.

In "Concrete and Stucco Houses" I have gone into the problem of suburban development at considerable length and in the thirteen years which have elapsed since its publication there is gratifying evidence that the principles set forth are now very generally accepted and that there have been many cases of their successful practical application. But the surface of

HOW TO BUILD A SUBURBAN HOUSE

the possibilities of developing beautiful and distinctive, instead of hideous and commonplace, suburbs, has only been scratched. Until every suburb has its "town plan" and has restrictions that include the appearance, as well as the purpose, of a building; until a Swiss chalet is barred out of a "Colonial" community, as decisively as a brewery would be from the principal residential boulevard, just so long shall we have suburbs and small towns that take the world's prize for ugliness and flimsiness. The time will come—and it will not be long—when a group of honest, serious-minded and intelligent business men, who are considering the purchase of three or four hundred acres of territory within commuting distance of the city, will engage their architect before they buy the property and secure his advice before they survey it; and they won't begin to ruin it in the usual way by laying out a gridiron of streets and boulevards, and complete the devastation by building houses of every conceivable and inconceivable style and type, only to see the land values drop and the whole community go under the hammer. The day will arrive—and it will arrive soon—when these men, enlightened by bitter experience, will plan their little town in advance. They will first determine upon a suitable style of architecture and then adhere to it. They will locate the business and community center, de-

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termine the sites for stores and public buildings, and sell home sites only to those who recognize and agree to the importance of adhering to the town plan—and who realize the profit that will accrue to them in requiring the beauty and consequent renown of the community to be insured and enhanced by the guiding hand of a resident, or supervising architect.

The essential requirements of economy of space, convenience, interesting sequence of rooms, durability and good taste are the same in building a suburban house as they are in the country house and the city house. The differences are mainly those of degree. The suburban house is not as restricted in area as the city house, but on the other hand it hasn't as much ground to spread over as the country house has and, generally speaking, it must be simpler and less expensive than either of its relatives.

There is more latitude in the choice of exposure than in the town residence, which generally can be entered from only one of the four points of compass, depending upon the direction in which the lot faces. The principal rooms of a suburban house may face the street or the garden, and the entrance may be in front or on either side. Being an all-year-round house the principal rooms should face the sun and the prevailing summer breezes. As the greatest joy of life is anticipation, care should be taken to place



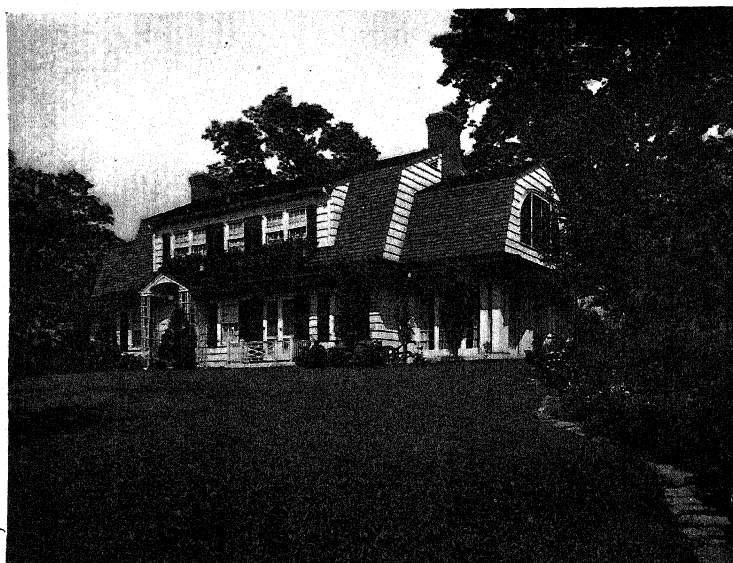
A modernized replica of John Howard Payne's home, which was erected on the grounds of the White House, Washington, D. C. Payne was the author of "Home, Sweet Home."



This delightful little house is the New York *Herald-Tribune* "model" demonstration house. John Floyd Yewell, architect.



A simple, straight-away design, of good proportions, for a small suburban house.
Dwight James Baum, architect.



A pleasing modification of the "Dutch" Colonial style. Dwight James Baum,
architect.

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the kitchen furthest from the direction of the prevailing winds, so that your dinner guest will not be able to figure out the complete menu before he removes his hat and coat. Space should of course be economized and used to the greatest advantage. The combination living room and dining room described on page 66 is an excellent feature of a suburban house that is not overlarge.

The ground around the house merits particular attention. Its treatment often makes or mars the house architecture, and a sufficient amount of money should be included in the budget to secure the services of the architect, or an associated landscape architect, to design the setting and then to pay for the walks and lawns, the trees and shrubs, and for a flower or vegetable garden—or both.

The exterior should reflect the good taste and the rational plan displayed inside. Its style should be appropriate to the neighborhood and exhibit due respect for precedent. It should neither be freakish nor too exotic. Remember that the chances are in favor of your having to move some day. Americans rarely take root and stay in one place for any great length of time. Therefore your house should be both attractive and conservative in appearance, and interesting but not too unconventional in plan to suit the average seeker of a ready-made home. Then, when

ECONOMY IN HOME BUILDING

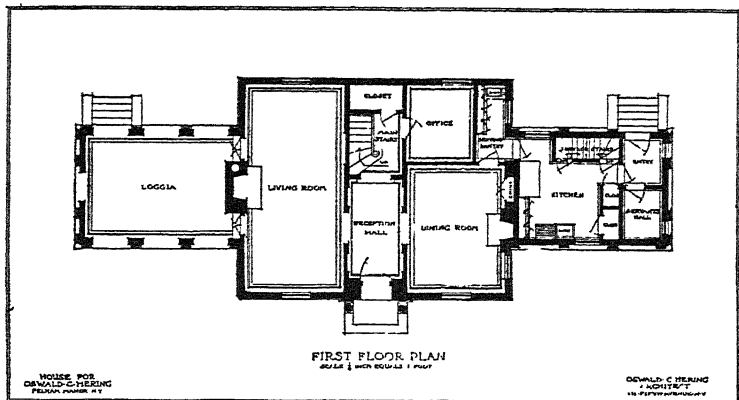
you decide, or are obliged, to sell it—you won't lose and you may profit.

Twenty years ago I designed a suburban home to house my own family. The floor plans are shown on page 135. It took six months to build the house—which was of frame construction covered with white marble dust stucco and roofed with salmon-colored tile. It was a cheerful-looking building, dignified and nicely balanced. It cost \$12,500, and with the land represented a total investment of \$15,000. Of course, I had no architect's fee to pay (the usual fee in those days was 5 per cent) and the roof tile and plumbing and electric-light fixtures were sold to me at "cost," and I believe it. The rest of the work was done by a general contractor and I do not think he lost any money on the transaction. I judge that under the usual conditions the house would have cost about a thousand dollars more than it cost me.

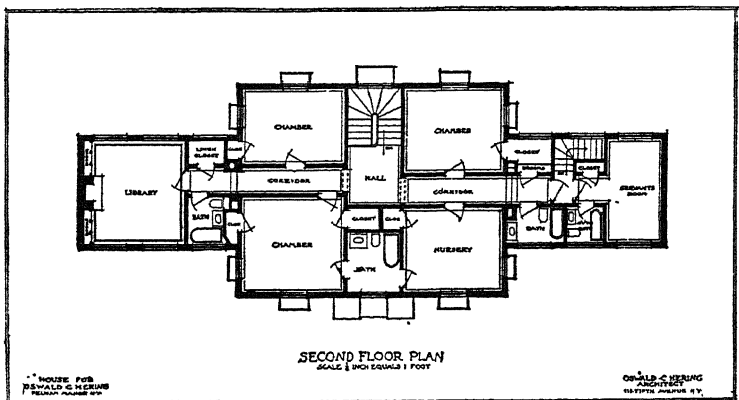
On Saturday and Sunday afternoons—when the weather was pleasant—every twenty minutes or so an automobile would stop in front of the house and by the gesticulations of the occupants it was evident that they were expatiating upon the charm of the architecture. (See frontispiece.)

We lived in the house four years and in that time I received commissions to design six houses in the

HOW TO BUILD A SUBURBAN HOUSE



First floor plan of the author's former residence in Pelham Manor, N. Y.



Second floor plan of the author's former residence in Pelham Manor, N. Y. The bathroom next to the library was added several years after the house was built. Hence its uneconomical position.

ECONOMY IN HOME BUILDING

neighborhood—all due to the appearance of my own house. At the end of four years' occupancy my wife and I decided to move into town. I got some boards and made and painted a sign—"For Sale"—and stuck it in the front lawn on a sunny Saturday morning. The usual string of automobiles came by—the usual number stopped—and the occupants gesticulated in the usual way—only a bit more violently, because of the "For Sale" sign. Finally one careful demobilized—that is to say, got out, and, after inspecting the premises, the spokesman made me an offer of \$20,000. I said I would consider it and give him my answer Sunday. An hour later a neighbor came in and offered me \$500 more. As the first bidder wouldn't go any higher, I sold the house the next day to my neighbor for \$20,500 net, for I had no real estate agent's commission to pay. The profit of \$5500 was due entirely to the architecture of the house, which had not only enhanced the value of my property, but of the neighborhood, by inducing others to build attractive houses near by. I am told that the value which has been placed upon my old house to-day—after twenty years of wear and tear—is \$50,000!

The owner very often makes up his mind what material he wants the outside wall of his house to be built of—before he calls in an architect. And just

HOW TO BUILD A SUBURBAN HOUSE

as often his ideas have to be modified to suit his pocketbook.

The following comparative tables may be of some value in determining the relative cost of outside walls of frame construction covered with shingles, with clapboards, with stucco, or veneered with brick; and of an 8-inch terra cotta block wall stuccoed, or veneered with brick; and of a 12-inch brick wall. These tables are as accurate as they can be, without taking the quantities from an actual building, and they relate to prices which prevailed in Great Neck, Long Island, during July, 1923. The unit used is 100 square feet of surface.

1. Frame construction, covered with Perfection random width cedar shingles laid $5\frac{1}{2}$ inches to the weather and unpainted.

100 ft. studding at 10 cents	\$10.00
125 b.m. of sheathing at 7 cents	8.75
Paper and nails	2.00
	<hr/>
	\$20.75
Cedar shingles, unpainted	14.25
15% overhead and profit	5.25
	<hr/>
	\$40.25

2. Frame construction, covered with siding, painted three coats.

ECONOMY IN HOME BUILDING

Rough lumber, sheathing, paper and nails as above	\$20.75
125 ft. b.m. of siding at 16 cents	20.00
Painting, 3 coats	6.00

\$46.75

15% overhead and profit..... 7.01

\$53.76

3. Frame construction, covered with stucco on metal lath.

Rough lumber, sheathing, paper and nails as above	\$20.75
11 yards of stucco at \$2.15.....	23.65

\$44.40

15% overhead and profit..... 6.66

\$51.06

4. Frame construction, covered with 4-inch brick veneer.

Rough lumber, sheathing, paper and nails as above	\$20.75
100 square feet 4-inch brick veneer.....	54.25

\$75.00

15% overhead and profit..... 11.25

\$86.25

5. Wet process, hydraulic concrete block covered with
 stucco.

Blocks, delivered	\$26.00
Laying and mortar	21.00

HOW TO BUILD A SUBURBAN HOUSE

11 yards of stucco at \$2.00	22.00
11 feet of furring	5.00
	<hr/>
	\$74.00
15% overhead and profit	11.10
	<hr/>
	\$85.10

6. Hollow tile blocks, covered with stucco.

Hollow tile blocks 8 inches thick at \$300 per M.	\$30.00
Cartage 1.7 tons at \$2.50	4.25
Mortar and laying	21.00
	<hr/>
	\$55.25
11 yards of stucco at \$2.00	22.00
100 feet of furring	5.00
	<hr/>
	\$82.25
15% overhead and profit	12.34
	<hr/>
	\$94.59

7. Hollow tile covered with 4-inch brick veneer.

Hollow tile 8 inches thick, delivered and laid as above	55.25
100 feet of furring	5.00
100 feet 4-inch brick veneer	54.25
	<hr/>
	\$114.50
15% overhead and profit	17.17
	<hr/>
	\$131.67

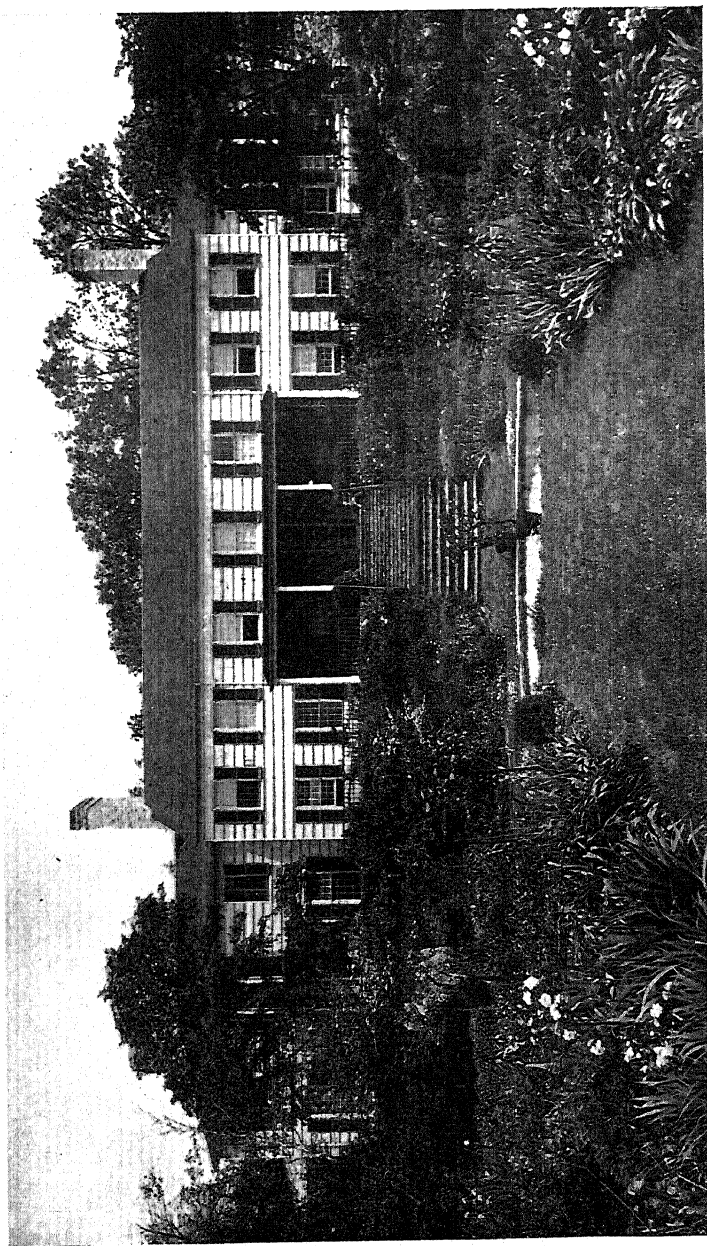
ECONOMY IN HOME BUILDING

Twelve-inch brick walls generally cost a trifle more than 8-inch hollow tile walls veneered with brick, due to higher wages of the labor employed—but if brick is a local product the cost will be lessened accordingly.

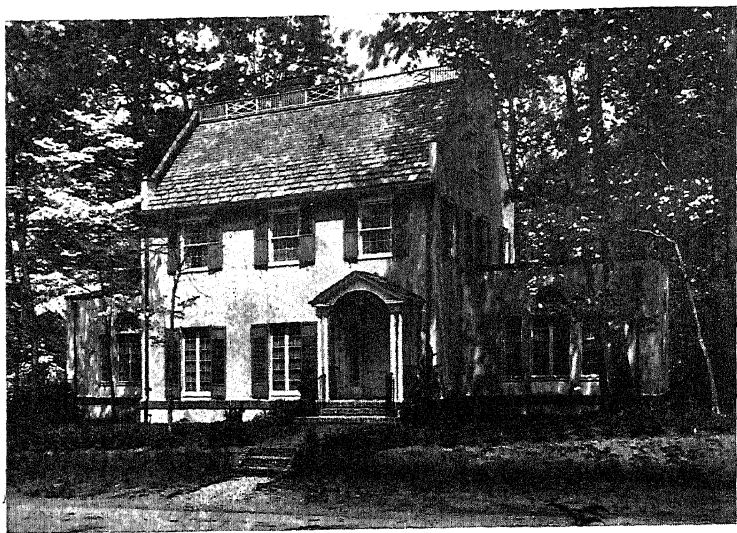
The tables show, then, that it costs about twice as much to have the outside walls built of masonry covered with stucco, as it does to have them built of frame construction covered with shingles, clapboards or stucco—and about three times as much to have them built of brick than of frame. They also disclose the interesting fact that a frame house can be stuccoed at less cost than if covered with clapboards and painted. And to this should be added that the need of repainting the clapboards every few years—and, as a consequence, destroying the vines that may have grown over them—is an added expense and regret that are saved in the stucco house.¹

The house illustrated on page 98 is planned to be built in Greenwich, Connecticut. The style is a variation of the Colonial theme. Delightful examples of its prototype are still standing in some of the older towns and cities of the Nutmeg State. The house fits the site. It looks as if it grew there naturally. To the passerby it reflects local tradition.

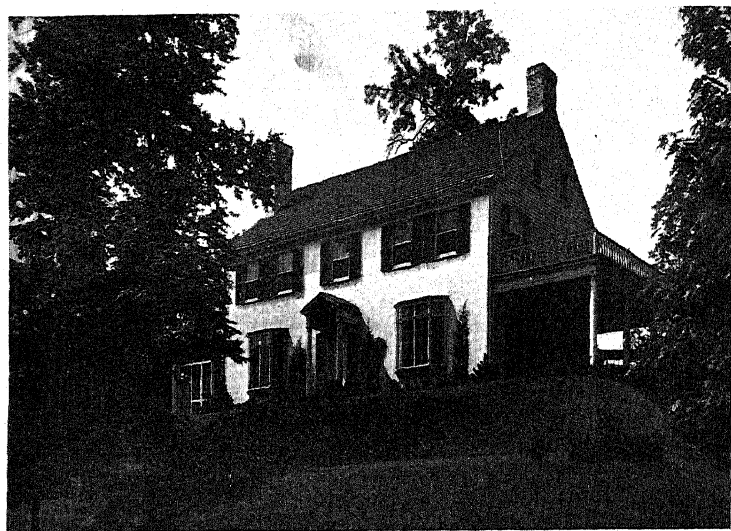
¹ For formula for making various kinds of stucco, see "Concrete and Stucco Houses."



A delightful design for a shingled house. A true reflection of the character of the old farm house on Long Island, N. Y. Charles A. Platt, architect.



The ridge line of the roof is here embellished by a wood railing. Note the charm of a slate roof when the thickness of the slates are graded. Oswald C. Hering, architect.



Unusual features that give superlative distinction to this house are the contrasted wall surfaces and the beautifully proportioned bay-windows. Dwight James Baum, architect.

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The walls are of wood, framed, carefully insulated and firestopped, and covered with white painted shingles. California redwood shingles on the roof partly protect the house from fire, as they are slow burning, and, at no greater cost than the patience of waiting two or three months, Nature turns them a beautiful, silver gray. White painted cornices, doors and windows, green blinds and red brick chimneys (sometimes the chimneys are painted white with a black band around the top to hide the smoke stains) brick walks, a few stately elms, a bit of box-wood flanking the front door, and honeysuckle and roses clambering over the trellises, complete the picture of a representative Connecticut, or Westchester County, home.

Inside, the demand for modern conveniences is supplied without destroying the expected atmosphere of the past. For, while the one bathroom of olden times is multiplied by four, the wide oak floors remain, and one opens the door by pressing a wrought iron thumb-latch instead of turning a brass knob. White painted trim is everywhere; but it is good paint that doesn't flake and fall, and its egg-shell finish is easily kept clean with an occasional rub from a damp cloth. The "57 varieties" of economies found in the plans of this house pay for the old-fashioned floors, and oldtime hardware—and the architect's fee.

The homebuilder should know that it is profitable to buy, and to build economically—but never cheaply. He should learn that it pays to respect tradition, to employ good taste and not to try to be original, remembering that originality often lives next door to vulgarity. If these rules are followed the suburbs of the cities will be beautiful and profitable, instead of ugly and down-at-the-heel as they so often are; they will be a source of delight and inspiration, instead of a constant reminder of sordidness and failure. Too many of our suburban home communities are a hideous conglomeration of barbarous shapes and screaming colors. After a few years of hopeless struggle not a few of these properties are foreclosed, neglected and finally become a permanent blot on the landscape.

We owe it to our children to build more tastefully and less wastefully; to build more beautifully and less flimsily; for, being largely the product of their environment, our children may be depended upon to acquire and to cultivate the taste that surrounds them.

HE DESCRIBES A BUNGALOW AND HOW TO BUILD IT

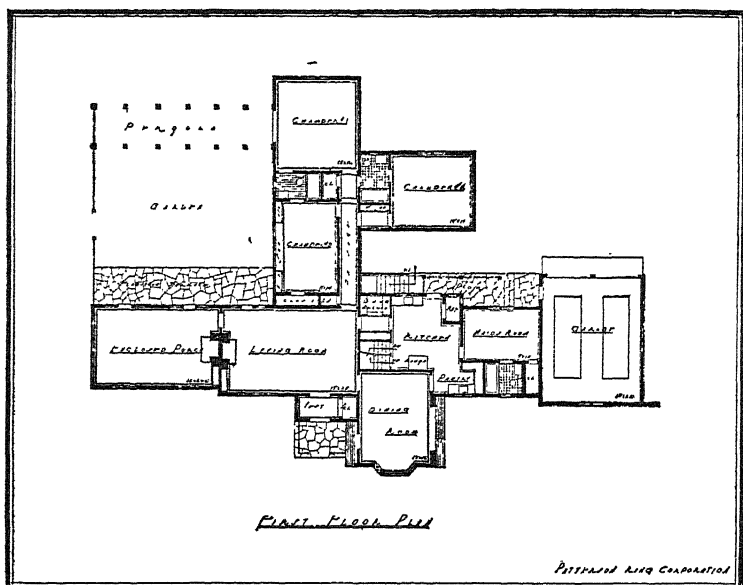
BUNGALOWS have become quite popular and should either be one-story structures, or if bedrooms are preferred in a story above, the roof lines should be kept low to give the building its accepted character.

In the bungalow pictured on page 148 the exterior walls are to be built of brick, preferably having a rough uneven surface texture. An interesting surface agreeable in color may be obtained from a mixture of red, brown and purple units laid in Flemish bond with the introduction of a light brown header to form at specified intervals a diamond-shaped, diaper pattern. The interior construction is intended to be framed with wood floor beams, covered with a double flooring, and wood stud partitions, either lathed and plastered or covered with sheetrock.

With certain slight modifications in plan and elevation this house may be constructed throughout of wood and the outside walls veneered with brick or stucco. In that event the frame skeleton should first be braced with sheathing boards nailed horizontally to the outside face of the studs. While sheathing

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nailed diagonally acts as an additional brace to the framework, it is apt to produce cracks, especially in the stucco. This sheathing should then be covered



An interesting bungalow plan. The living room should be the dominant note in a bungalow. A better distribution of windows would make it a more livable room. Patterson & King, architects.

with a heavy building paper. Finally the stucco is applied on self-furring metal lath, or the frame-work is veneered with a 4-inch covering of brick laid an inch away from the frame-work and secured to it at intervals with iron ties. The exterior might also be built of hollow tiles, of concrete blocks, or of mono-

lithic reënforced concrete, and then veneered with brick or covered with stucco. If it is desired, to present the true face of a concrete wall without a veneer, a pleasing effect may be obtained in the blocks, or with monolithic concrete, if the aggregates selected (the sand, gravel, broken stone, or marble chips) are of suitable size and agreeable color. There is a terra cotta block called "tapestry tile" which has a finished face of an attractive color and texture, and this unit may also be effectively used for the outside walls.

The cost of these various forms of outside wall construction does not differ to a very great extent, one form often being as inexpensive as another, depending upon local conditions—that is, upon the cost of labor and material at the proposed site. For these reasons, too, if a semi-fireproof construction is desired, the cost may not be increased very materially; but for fireproof construction an increase in cost of from 25 per cent to 50 per cent must of course be expected in so small a house.

This explanation is offered, as having an important bearing upon "estimates of cost," which frequently accompany the plans of houses illustrated in the newspapers and in "popular" magazines, and which are generally misleading because of the fact that the plans are usually unaccompanied by any definite specification or a statement of where the proposed struc-

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ture is to be built. The kind of plumbing and hardware, the quality of woodwork and painting, are important factors in estimating the cost of a building, and they must be definitely specified and carefully calculated if the total cost of the structure is to be approximated within reasonable limits. For example, the author is able to build houses 15 per cent cheaper in the environs of Philadelphia, Pa., than on Long Island, N. Y., and as this sum often represents the difference in cost between outside walls of one material and another, it must be obvious to all that no accurate estimate can be given of the cost of any particular house unless the location of the site is named, and unless the quality of the material and labor to be used is clearly specified. It is evident, then, that distance to the place of manufacture, freight and cartage play an important part in the cost of materials.

The following specification is only a general description of the materials to be used in the construction and finish of the house illustrated, and the estimate of cost is based merely upon the author's experience in building cottages of similar requirements.

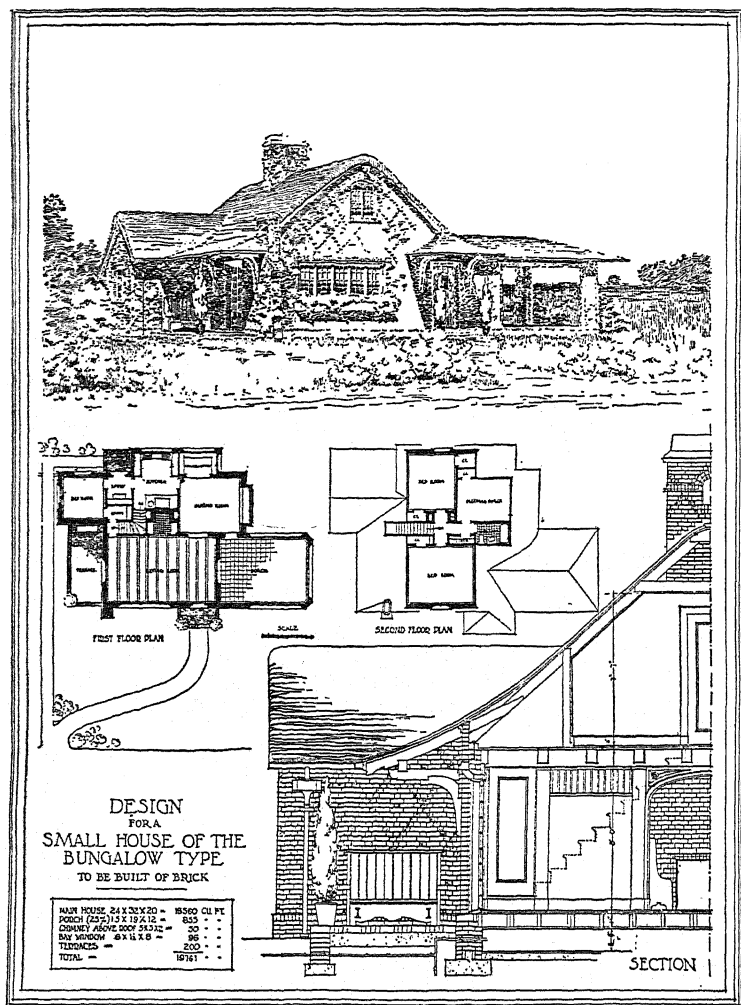
The roof is to be covered with shingles laid irregularly, as indicated on the drawing, to give a thatched effect. They should be of a kind and a quality that will weather a pleasing gray. California redwood

HE DESCRIBES A BUNGALOW

shingles turn a beautiful gray, when exposed for a month or two. They are also slow burning and consequently are a partial protection against fire from sparks that might fall from the chimney. The cornices and brackets are to be of cypress or chestnut stained a "weathered" gray, and the window sash are to be painted an ivory white. The face brick is to be as described above and laid in a buff-colored mortar with flush-cut joints. The terrace and porch floors may be faced with cement colored red with oxide of iron and marked off into squares as shown, and then oiled, or the floors may be finished with hard, smooth, purplish-red brick, or tile, laid flat. In either case a foundation of at least four inches of cinder or gravel concrete should be provided upon which to receive the cement finish, or the brick, or tile.

The first-floor rooms shall be trimmed with hazel-wood or chestnut, finished the natural color of the wood, varnished in the kitchen and waxed in the other rooms. The living-room shall have a beam ceiling and the walls are to be covered from base to ceiling with a 10-inch board wainscot, the edges of the boards to be milled and the joints covered with a small molding. The dining-room shall have a chair rail. The bedrooms and bathroom shall be trimmed with white-wood painted and finished with an ivory white enamel.

ECONOMY IN HOME BUILDING



The real bungalow is only one story in height. Here is a bungalow with two stories that look like one; showing how the owner may have his cake and eat it, too. Oswald C. Hering, architect.

HE DESCRIBES A BUNGALOW

The bathroom shall have a tile floor and base and a Keene's cement wainscot marked off into squares and painted with ivory enamel. The other rooms shall have finished floors of comb-grained yellow pine laid over a heavy deafening felt and planed smooth. The surface of the floors shall be stained a light brown and waxed.

The estimated cost of the house in a locality where average prices in labor and material prevail, and including items not enumerated, but necessary for the construction and finish of the building, is as follows:

Excavating	\$ 200
Masonry and plastering (less if sheetrock is used in place of plaster)	2,500
Carpentry and millwork	3,500
Sheet metal work	150
Heating	400
Plumbing	800
Lighting fixtures and wiring	500
Painting	700
Screens and shades	150
	<hr/>
	\$8,900

To this should be added a sum sufficient for grading and seeding, for trees, shrubs, and vines, and for the construction of the driveway and walks. There should also be reserved a sum for at least a few pieces of distinctive furniture. A contractor's profit of 15

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per cent is not an unreasonable charge for building such a small house, and 10 per cent of the total cost is due the architect if conscientious workmanship and careful supervision and attention to details are desired. Anybody who has had one building experience knows that this supervision is essential if satisfactory results are to be obtained.

Bungalows are generally regarded as inexpensive. This is not a safe assumption. When the cost of the bungalow is low, it is usually because there is no cellar and no heating system, or because trim, doors and fixtures of stock design have been used, or because the walls have been covered with compo-board, instead of plaster, or the inside of the outer walls left uncovered, allowing the studs to show.

Generally speaking, the more ground that is covered, the greater will be the cost of the superstructure for the reason that more than the normal amount of foundation and roof is required. A two story, square house will cost less than a one story bungalow, having the same number of cubic feet, and similarly treated, but spread over an oblong of twice the area of the square.

Assuming however that no cellar is required other than sufficient space for a boiler and coal, and that the direct system of heating, by radiators placed in the rooms, is acceptable, a bungalow for all-year-

HE DESCRIBES A BUNGALOW

round purposes may be built for approximately the same cost as a two-story house having the same content. The roof rafters must, however, be left exposed to save the cost of plastering, and the outer walls should not be higher than is necessary to receive the normal window and to enable a person to stand upright, without danger of hitting the head. Not less than seven feet in height should be allowed from the finished floor line to the "plate"—the timber upon which the sloping rafters rest. The height of the ridge is governed by the design and the cost. A lofty ridge makes a more spacious room but it requires longer rafters and more roof covering than a lower ridge. A practical and economical slope is a pitch of from thirty to forty-five degrees.

The exposed rafters should be dressed to receive the stain or finish desired. If the outside walls are of masonry, they should be furred and plastered or furred and covered with sheetrock. If the outside walls are of wood, the studs may be covered, or dressed and left exposed.

The footing of the foundations should be laid below frost line, to prevent any upheaval from the action of the frost, and the foundation walls should be built high enough above the ground—at least two feet—to form an air space between the floor beams and the ground. This air space should be ventilated, in order

that the floor beams may not be attacked and weakened by dry rot.

A one-story house is conveniently and economically operated, for there are no stairs to climb, the conditions being similar to those in a city apartment. And without a doubt a more pleasing and interesting design can be made of a low, spreading structure, in which the horizontal lines predominate, than of a high, box-like building. But if the cost is to be kept within that of a two-story structure, economies, such as have been cited, must be observed, to offset the cost of the greater amount of foundation and roof.

Bungalows, just as larger houses, should conform in design, and in the materials used, to the spirit of the surroundings. Off in the woods, for example, they may well be built of logs, while bungalows built of concrete and stucco and roofed with Spanish tile, suggesting the old Missions, are appropriate to the landscape of California.

HE TELLS YOU HOW AND WHEN TO REMODEL OLD BUILDINGS

THERE are at least two tests that should be applied to proposed alterations of old buildings, before embarking on that venturesome and speculative procedure. Is the old building structurally sound and does the alteration require tearing out less than a third of the interior? If the answers are "yes"—go ahead. Otherwise it will probably be cheaper to tear the old building down and erect a new one.

My misfortune in failing to obtain a good photograph of the "Twins" in their original garb is a handicap, to overcome which some imaginative force on the part of the reader will be required. The small pictures give but a faint idea of the hopelessly commonplace appearance of the design, if indeed such a term is at all applicable. A walk through a local suburb however will disclose many a counterpart of this degenerate type, designed and built in the seventies by the village carpenter.

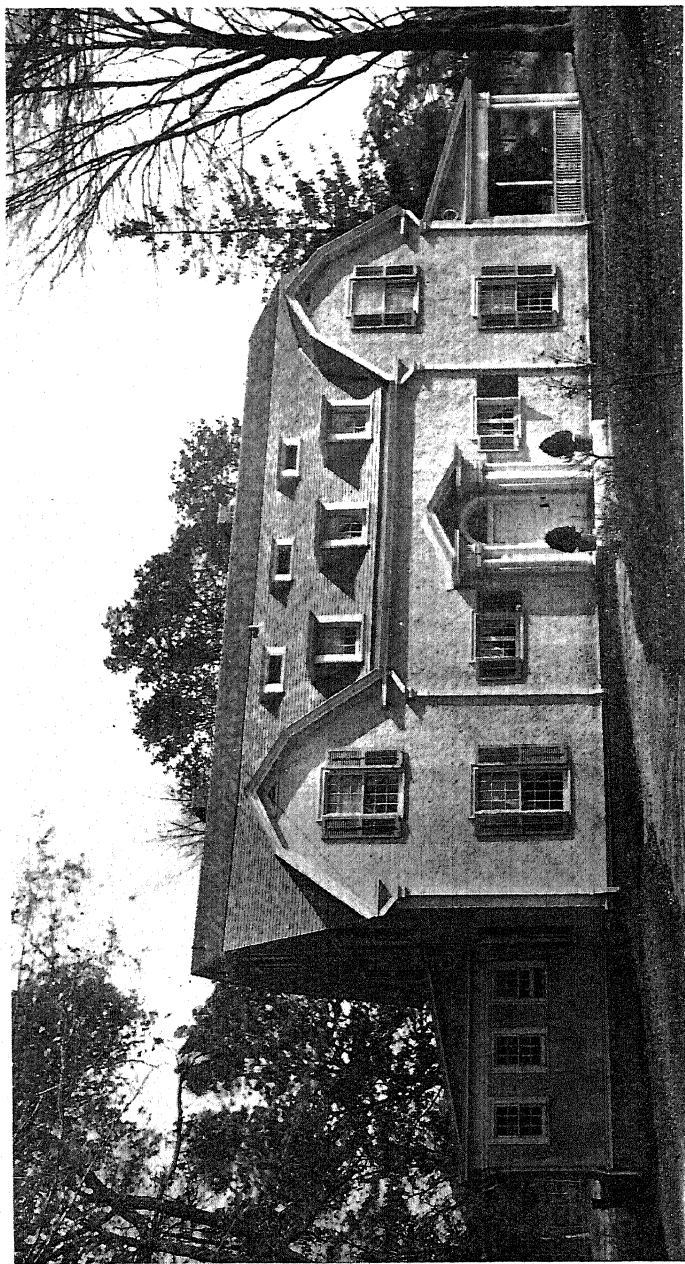
My washerwoman lived in one of the "Twins" and

ECONOMY IN HOME BUILDING

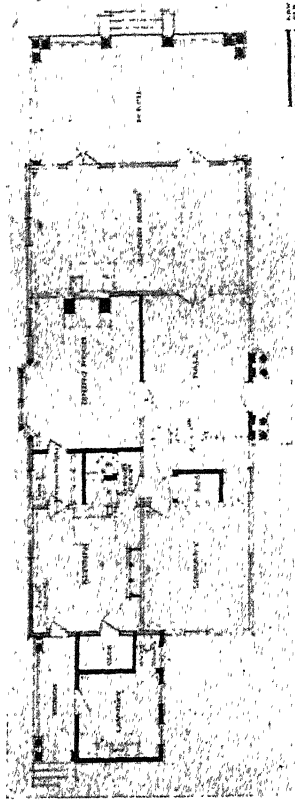
my furnace man in the other, and the combined monthly rental, when it could be collected, amounted to a scant \$32. This was in 1908.

The immediate neighborhood having developed into a high class residential section, it was deemed advisable by the owner of this and adjacent property to wipe these blots from the landscape without further ado. Then came a tentative proposal to clothe them with a veneer of respectability, to make them habitable with modern plumbing and heating systems, electric lighting, new floors, etc; but it was a half-hearted overture that presupposed the hopelessness of the task.

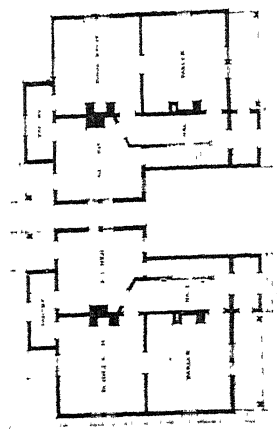
At this point the author was engaged to look over the ground and make a report. A careful study of the floor plans indicated a way in which the two structures could be brought together under one roof, which would result in an agreeable arrangement of rooms of generous proportions. A thorough examination of the houses followed, disclosing structural timbers sound and of adequate strength, and, needless to say, seasoned as none obtainable in the lumber yards. It was thereupon decided to proceed with the transfiguration. Within, by the judicious removal of a partition here and there, or the erection of a new one, the enclosing of the space between the houses after the conjunction had been effected in the rear,



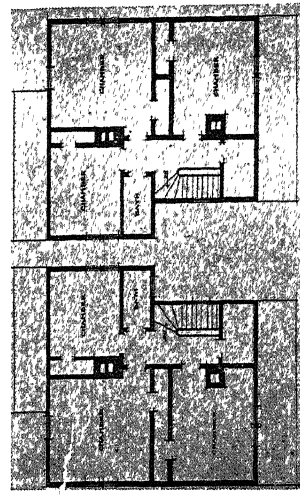
The metamorphosis of "The Twins." Two small "Queen Anne" cottages were joined together, roofed, stuccoed and made into a large single dwelling. Oswald C. Hering, architect.



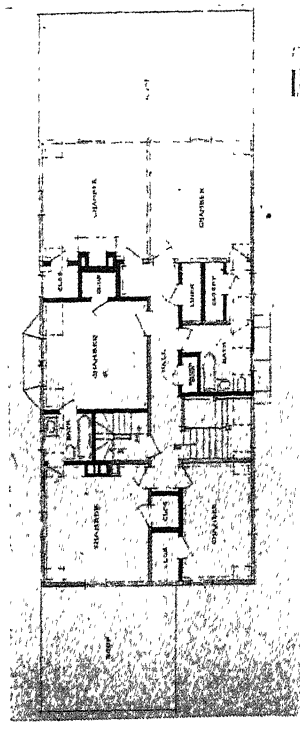
First floor plan of "The Twins." The black portions represent new construction. Oswald C. Hering, architect.



First floor plan of "The Twins" before the alteration.



Second floor plan of "The Twins" before the alteration.



Second floor plan of "The Twins." The black portions represent new construction. Oswald C. Hering, architect.

HOW TO REMODEL OLD BUILDINGS

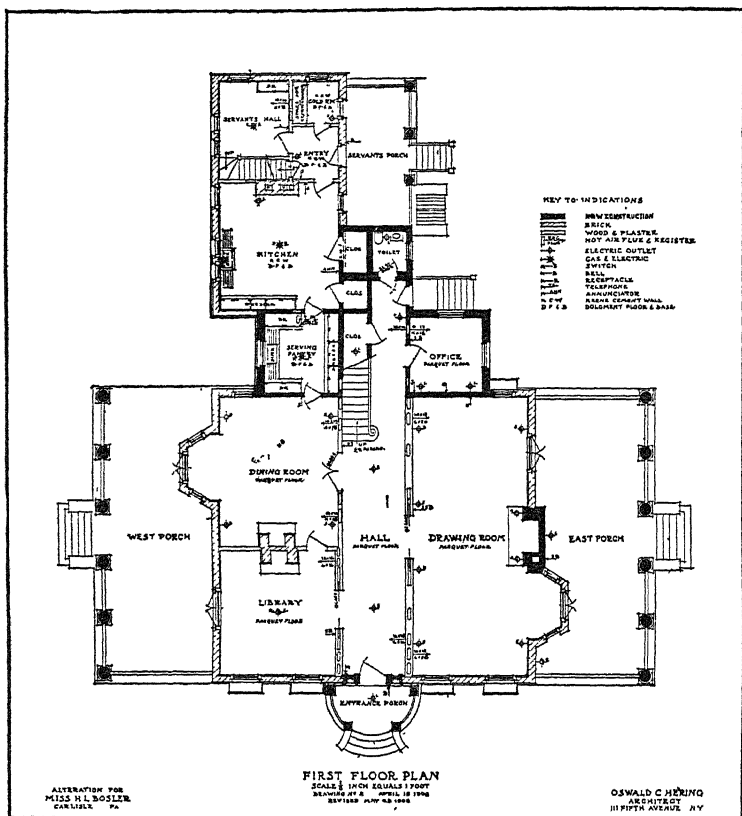
forming a hospitable entrance hall, the fulfillment of the revised plan was a simple matter.

Without, the jigsaw ornamentation so fondly and lavishly indulged in was ruthlessly removed, and the upper part of the steep pitched roofs modified to a gambrel. A final dress of rough stucco was applied to grooved stucco boards nailed to the sheathing, and then, after a few finishing touches in the way of carefully restrained detail at the cornices and at the front entrance and with three coats of white paint applied to the woodwork, the metamorphosis was complete.

It is true that the owner scratched his head reflectively when he saw the total bill, for it came close to what a new house of the same size would have cost. This, however, was due to the fact that an estimate to complete the work under contract, for just about one-half of the amount finally expended, was rejected by the owner in the light of an apparent saving if done "by day's labor"—a method fraught with snares and pitfalls. Then again a great scarcity of material and labor developed soon after ground was broken. At one time plasterers demanded and received \$7 a day, \$2 more than their usual pay in those days, while for a period of several weeks no labor of any description could be had for love or money. While the expense might therefore have been lessened had the

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work been done under contract, who will say that the stringency in the labor and material markets would

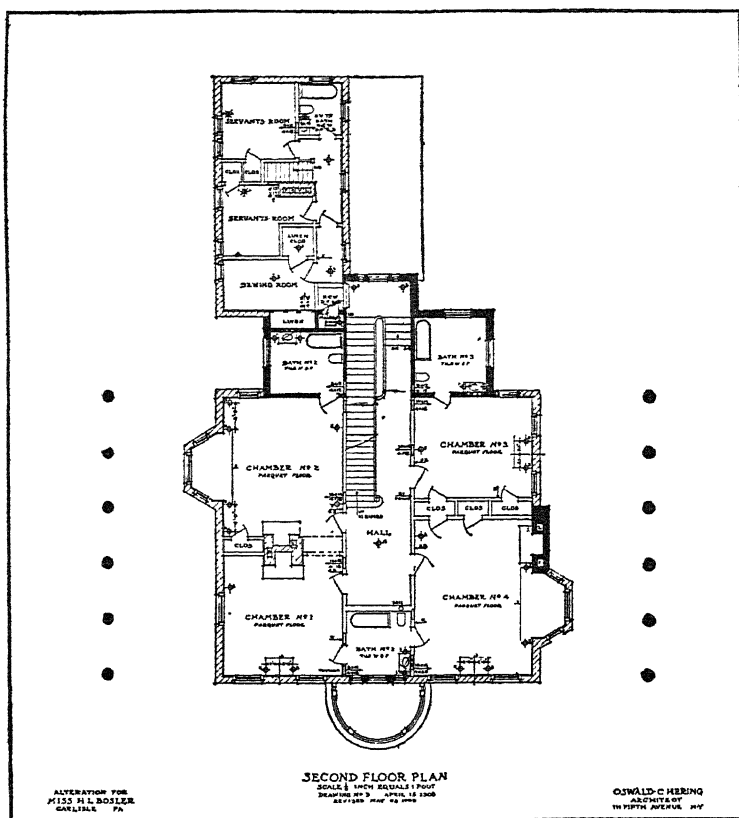


First floor plan of the Bosler house. The black portions indicate new construction.

not have resulted in even a greater outlay through the possible failure of the contractor? It is well to be philosophical in such matters.

HOW TO REMODEL OLD BUILDINGS

The accompanying drawings are made so as to show at a glance just how much of the old walls were



Second floor plan of the Bosler house. The black portions indicate new construction.

used and where new material had to be employed to fill out.

As it stands to-day, the house is a credit to the

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neighborhood. It rented for a goodly sum, and the tenant expressed himself as so well pleased with the comfortable plan and the homelike exterior that he planned to duplicate the house in another part of the country. In view of these facts the owner, being of a cheerful turn of mind, declared that the venture may fairly be described as successful.

The chief reason for remodeling the dismal Victorian mansion pictured on page 157 was that it was an heirloom and there was a sufficient sentiment involved to prompt the owner to give it a new and more modern dress rather than destroy it utterly.

From the comments of those who have looked upon the photographs of the old house, and the remodeled product, it appears that the impression is generally one of amazement that so little of the old house was used. "Anybody," said my severest critic, "can tear down an old house and substitute a new one in its place." The disguise, or rather the metamorphosis, has apparently been so complete that a careful study of the plans as well as a close scrutiny of the pictures is necessary to discover that the original building remains, structurally, very much the same as before, and that, with a few exceptions, only superficial changes have been made. Important among these are the removal of the old verandas, the main cornice, and the projecting central bay. The false wooden

HOW TO REMODEL OLD BUILDINGS

heads of the old windows were taken out and replaced with white marble lintels. The servants' wing was detached from the main house, moved about ten feet to the rear, and a new structure built connecting the dissevered parts. The entire third story of the wing was then removed, and the second story covered with a flat roof.

To this revised integral have been added the east and west verandas with their two story columns, the central porch and main entrance, new window sash (practically all of the old frames were preserved), and a new cornice and balustrade. As it was necessary to retain the third story over the main house the problem of how to deal with the old roof with the least expense was solved by covering it with a new outer shell of slate and copper, although I should have preferred a vertical masonry wall above the main cornice in the form of the classic attic story.

In northern localities a two-storied veranda is sometimes found to be an objectionable feature when it prevents the sunlight from entering the rooms on the second floor. Frequently, too, it is a difficult and expensive matter to screen such a veranda when protection is desired from the onslaughts of flies and mosquitoes. In the present instance, however, the rooms affected by this treatment are at the corners of the building, each room having at least one window

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which is not shaded by the porch, and as screens were not desired in any event, there remained no vital objection to the method employed in giving dignity and interest to an ugly and ill-proportioned façade. Here, fortune for once favored the architect, for without means of elongating the front of the house the problem would have been, esthetically, almost a hopeless one.

Inside, the alterations necessary to fulfill the new requirements were mainly superficial. The partition between the front and back parlors was removed, forming one large drawing room. The heavy dark walnut staircase was taken down and replaced by one of greater delicacy, with turned and twisted white balusters and a mahogany handrail. On the second floor a partition was built across the front of the hall in order to provide a bathroom for the two front rooms. Some damaged plaster on the walls and ceilings was repaired, a few doors were added, and new parquet floors laid in the principal rooms.

The new intermediate portion, linking the old servants' wing with the main building, gave an office and a large serving pantry on either side of the hall, with two bathrooms above. It is worthy of record that the original house with its eighteen rooms had but one bathroom!

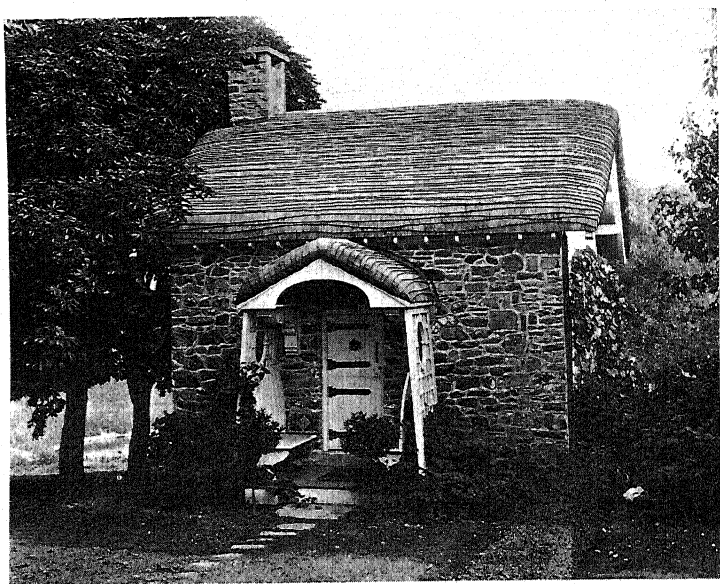
The walls of the principal rooms on the first floor



The Bosler house, "before and after." After this dismal Victorian mansion had its kitchen wing amputated, both patient and wing were moved to the new site and joined again by inserting a modern butler's pantry and office, with bathrooms above. Oswald C. Hering, architect.



The "old smoke house." Estate of W. E. Hering, Esq., Abington, Pa.



The above remodeled into a studio. Oswald C. Hering, architect.

HOW TO REMODEL OLD BUILDINGS

and the staircase hall up to the third story are covered with silk brocades above wainscots of paneled wood. New plaster cornices were run and the ceilings decorated with applied ornament. The walls of the bathrooms are tiled from floor to ceiling, white glazed tile being used to a height of nine feet, and above this a colored tile frieze and cove cornice; the bathroom floors are paved with green glazed tile. The service portion of the house has floors of composition made integral with the base, forming a perfectly tight and sanitary surface.

Modern systems of heating, lighting, and plumbing have been installed, and the addition of other features, such as a French combination coal and gas range with hot water boiler, an automatic gas heater located in the cellar and connected with a separate water tank to insure a large and constant supply of hot water for the bathrooms, a "built in" silver safe, clothes dryer, etc., has made a comfortable and attractive home out of a most forbidding, unsanitary, and generally objectionable house.

A considerable item of the total cost was incurred by moving the entire house about fifty feet farther back from the road, requiring a new excavation and new foundation walls, but this precaution was deemed advisable in view of the greater privacy obtained.

As the masonry and carpentry work were done by

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day's labor, the total expense was probably in excess of what would have been incurred had the work been executed under contract. A new house, however, of similar size, would have cost considerably more to build than the amount expended on the alteration of the old structure; and there was also the advantage derived from the use of well-seasoned timbers.

The owner has expressed her pleasure and satisfaction with the changes made, so it may be assumed that the problem was solved with some degree of merit. While the architect does not feel that it is within his province to comment in detail upon the result (except to disclaim responsibility for the garniture of shrubs, etc., around the verandas) the resulting composition is decidedly interesting and not without a certain charm that a new building might easily have lacked. At least it is homelike and fits the environment like a glove, and when age has softened the glare of the new paint and the gray brick walls are warmed with protecting vines, one may well fancy that under the stately columned porticos are heard the spirit voices of Old Colonial days.¹

I had another client, years ago, who asked me to

¹ For an illustrated description of how to remodel a block of old "brownstone fronts"—see the author's "Concrete and Stucco Houses."

HOW TO REMODEL OLD BUILDINGS

remodel a house he had bought. It had been built by a speculative builder from a plan such as is turned out in a "plan factory" and published in books that are sold for a dollar or two, or given away with a barrel of flour. The house was bad through and through, structurally and architecturally, and I advised him to have it torn down and a new house built. But he was obdurate. He was one of those persons who say—"I know what I like." So the house was braced and altered and added to, and its superficial defects covered, but, of course, nothing could be done to correct the fundamental faults of the layout of the original plan. In the end about a third more was spent for a poor compromise, than for a new, well planned and soundly built house.

Generally speaking it does not pay to alter a house that has no particular virtue or charm. The same principle applies to an attractive gown of an out-of-date period. It is better and cheaper to keep it and wear it at a masquerade—than to endeavor to make it over to accord with the style of the day.

If an old house is well-planned and is of a pleasing style of architecture, it often has attractive possibilities. Then it is best to let it be, except for necessary minor changes. Add to it as much as you wish, but do as little tearing out and down of the original structure as possible. Remember, too, that it is cheaper

to place a few dormers in the old roof than to raise it, and that it costs less to build a terrace and put up an awning, than to build a porch.

If you buy an old house and wish to move it to a new site—the cost may not be as great as you imagine. If the house is of frame construction, and close to navigable waters, it may be placed on a float and carried many miles to a new shore site, at comparatively small cost, perhaps for not over \$500. Or, it may be carried a long way on a street or road at no very great expense. But if it is a brick or stone house, and large, it may cost more than it is worth to move it over a short distance. No intelligent estimates for moving a house can be given here—for the cost varies greatly according to the conditions that prevail. If you have such a project in view, your architect can readily obtain estimates for you.

HE TELLS YOU HOW TO BUILD A TOWN HOUSE

ONE of the fundamental differences between a town house and a country house is the limitation placed upon the boundary lines of the city residence. In the country there is usually plenty of room in which to spread out the plan without approaching, even closely, the property lines which separate your possessions from your neighbor's. But in the city the cost of the land is so great that, except for a few multimillionaires, nearly every house-builder has utilized all the space for the building that the law allows him. Consequently the architect must not only exercise great care that he does not encroach upon a neighboring lot—for a fraction of an inch may destroy the validity of a title, or bring about a costly lawsuit—but he must exercise the greatest ingenuity in getting the most and the best out of a given fixed area.

First of all there are the city's laws and regulations to be met, more numerous and stringent than in the country, and to which obedience is enforced by the Building Department. Before any structural work can be begun, complete plans and specifications

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must first be filed with this department and approved by it, consequently there is entailed more preliminary work on the part of the architect, accompanied by greater expense, a condition which should be more generally recognized by owners.

The ideal way to build a city house is to find a block which can be bought in its entirety and persuade acquaintances and friends each to take a lot, and then all join together to remodel the houses or tear them down and build new ones—in a similar style of architecture and with a common central garden.¹ But if this is not practical, one has the choice of a corner or interior lot.

Assuming that the site chosen is in a block, sandwiched between the usual “brownstone fronts,” having the high stoop, any consideration for the neighboring architecture may be ignored, for these ugly products of the speculative builder, erected in gross lots towards the close of the nineteenth century, will all be removed in time.

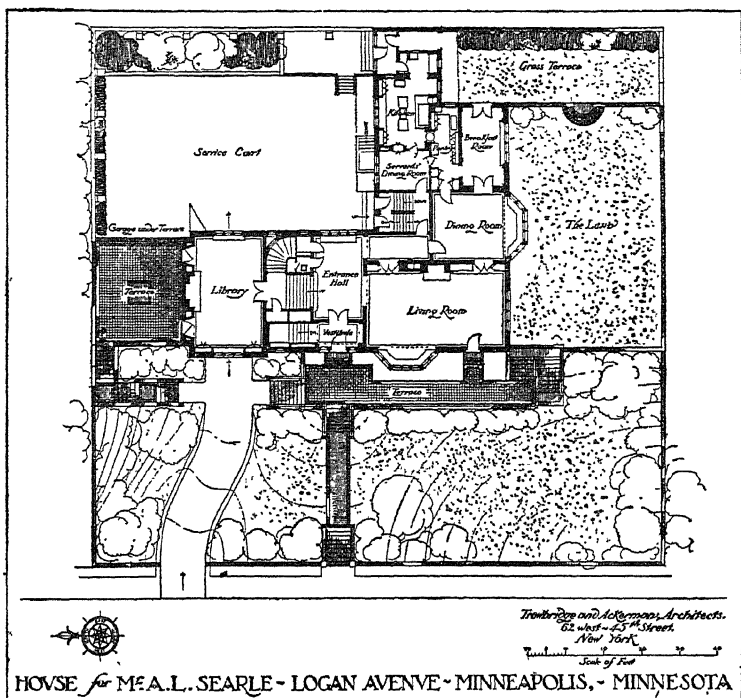
The question of the style of architecture which is to be used becomes, therefore, largely a matter of personal taste, for such exterior architecture as there is must be concentrated on one façade—the street front—and there is no environment to consider. Nat-

¹ For plans and a description of how to remodel a block of city houses, see third edition of “Concrete and Stucco Houses.”

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urally, the interior should conform in style to the exterior.

And here arises a delicate question. What is an appropriate style of architecture for a town house in



An interesting solution of the problems of a city house on a sloping site.

a block owned and lived in, let us say, by a self-educated American manufacturer who made his "pile" out West, and comes to New York, with his self-taught wife, to settle down and spend it? They are no fools. They may not know who their great-grand-

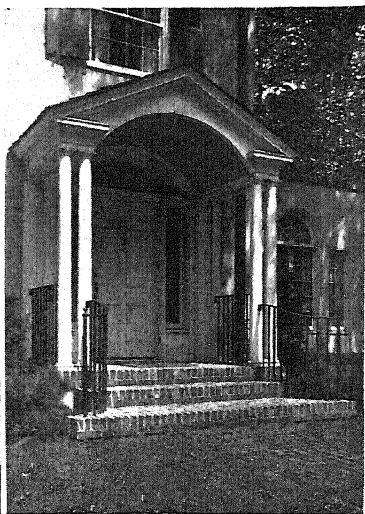
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parents were, and a couple of years' attendance in the little red schoolhouse may have been the sum of their "book larnin'"—but the man can make all the money he wants—and his wife can read the newspapers and the magazines. To sum up, they have an idea—reasonably clear to themselves—that they know "who's who" and "what's what."

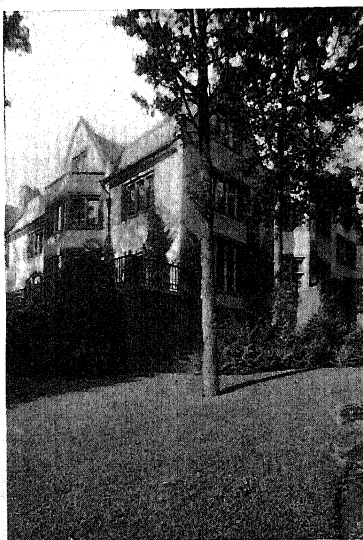
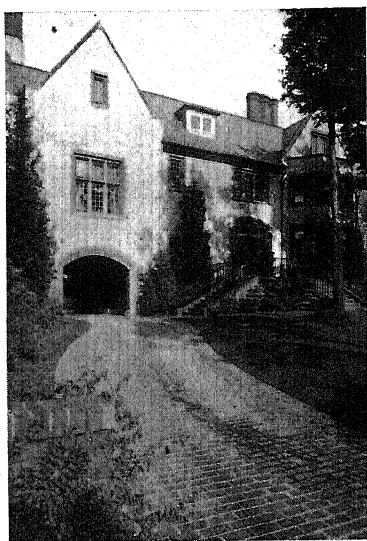
Twenty years ago little was known and less said, by the owner, during the preliminary discussions with the architect about appropriateness in architectural styles. In recent years, however, the vocabulary of our clients has been enriched with such words as "proportion," "texture" "color scheme," etc., which are flung upon the air with no little ease and grace and, sometimes, approaching accuracy. Scorn, born of ignorance, has been turned by superficial learning to fear of criticism—particularly by the woman. There is a prevalent fallacy that the owner has less to say than his wife about the designing of their home. My experience has been that the male dominates here, as well as in most activities. But occasionally one meets the Amazonian type—and—well it's always interesting! I recall one instance where the wife of a millionaire manufacturer of hot-water bags, or some such useful article, was possessed with the determination to have a town house with a François I façade, imported from Blois, and so carefully copied



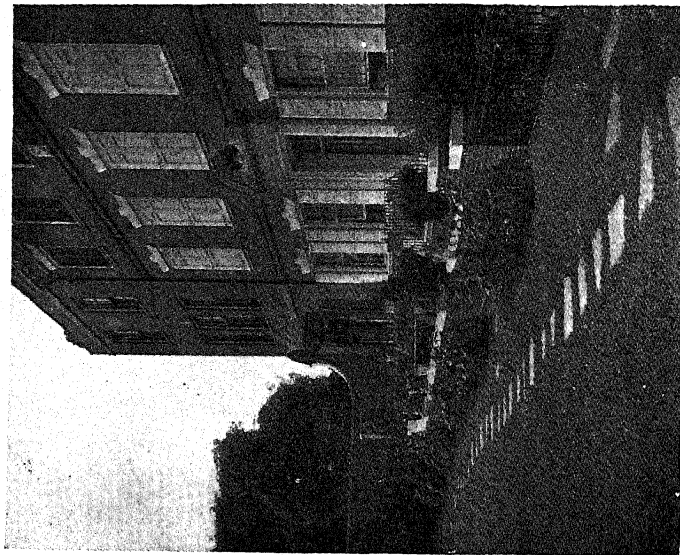
These walls and ceilings are covered with sheetrock, painted, instead of plaster. (See text, p. 61.) Oswald C. Hering, architect.



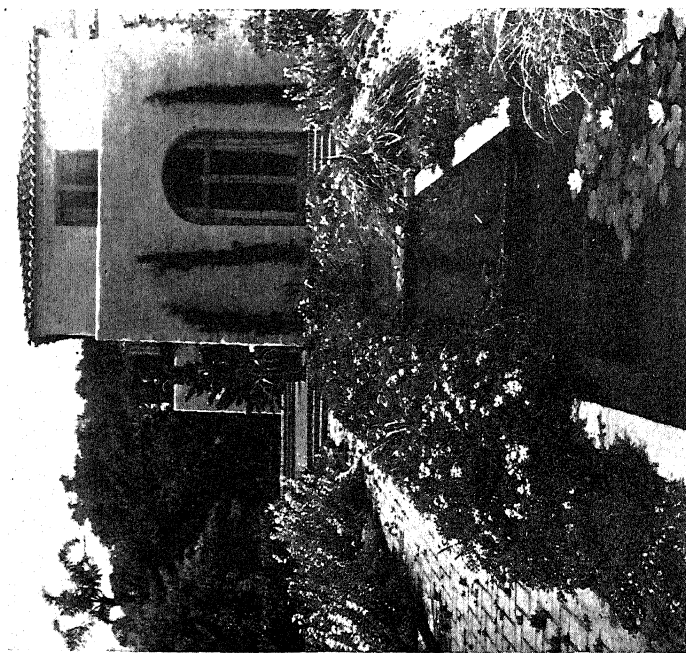
Iron railings with brass knobs give distinction to this entrance porch. Oswald C. Hering, architect.



A city house ingeniously designed to accommodate entrances on two levels. Trowbridge and Ackerman, architects.



This is the way that the back-yards of New York city houses can be made to appear—when neighbors coöperate. Mott B. Schmidt, architect.



The rounded, "soapy" edge of the stucco walls is a characteristic of the adobe house of Mexico and southern California. George Washington Smith, architect.

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as to defy criticism, while inside there were to be, among other rooms, a Louis XIV drawing room, a Louis XV dining room and a Louis XVI library. "And they must be absolutely pure," she added, knowingly. Now aside from a natural irritation resulting from the application of the word "pure" to anything even remotely connected with these three sovereign Louis—what logic is there in designing a room for an American's home situated anywhere in this country in the "pure" style of monarchs, reigning centuries ago, over a people long since dead and buried; a people who possessed only the most fundamental characteristics in common with the American of to-day, such as love, hatred and ambition?

This lady came from the Middle West and while the rolling r's of her inheritance, coupled with the *carte du jour* French of the Park Avenue restaurant, would be the envy and despair of a Gascon, she was a typical, jolly and more or less unconventional, Hoosierite, whose husband's money gave her the opportunity to play the popular game of battering at the doors of New York society.

Architecture that is real and truthful has always expressed the habits and local customs of the people, in their buildings. Consequently for an American lady of the 20th century to demand that her home

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shall have a "pure" Louis Quinze room, in which the family may eat, is as absurd, and artificial, and meaningless, as for a French lady of the 14th century to require her local architect to provide her with a bedroom in the style of the good King Tutankhamen. Rooms for private, home use should reflect the life and spirit of the time, and not be alien importations.

I recall another instance of a marvelously clever reproduction, in one of our Western States, of a large and imposing manor house still standing in England. Every detail was accurately copied—abrasions of the woodwork, steps, that were worn and hollowed out by constant use, even a large spot on the floor caused by the spilling of wine during a 16th century carousal, was faithfully duplicated—how, I do not know. The house is a veritable museum—as worthy of exhibition as is a fine copy of an old master.

And the family for whom this gorgeous English manor was built, with its enormous "great hall," containing two large fireplaces, a room suggestive of a suitable rendezvous for Sir John Falstaff and his rollicking, convivial friends—the family who were living in this copy of a residence of a great English lord and warrior, consisted of four, quiet, modest, unassuming, and diminutive Jews, the father being about five feet high, the mother four feet eleven, the

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son four feet ten, and the daughter four feet nine. As they filed in to welcome me, I nearly burst into tears!

Copying pure styles for any purpose except for that of exhibition and instruction is unsound practice. On the other hand, precedent is our best and safest teacher, and we should not ignore it in order to evolve something "new," which is very apt to be monstrous or silly and to create as meaningless an environment for us to-day as does a "pure" style of bygone ages.

What the architect may logically do is to ascertain the ancestry, taste and manner of living of his client and submit a design that will suggest these attributes in lines of precedent, modified to suit local custom and atmosphere. Thus a lady of English descent—who is fond of Elizabethan architecture, and who possesses furnishings of that period, and who feels at home with them, may properly request a house inspired by Elizabethan motifs. It should not be a copy, however, or a "pure" reproduction. The moldings and colors and general atmosphere of Elizabethan architecture should be modified to reflect the life of to-day. It will require the intermarriage of many generations, of course, to dilute the European strain in all of us—to the point that we may express a common, national, distinctive, taste that will be reflected in our buildings. But in this way, and only in this way, will a

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style be some day evolved that may be known as American architecture.

There is also to be met the person who believes in "expressing your personality" in the architecture of your house, by the *literal* translation of your personal feelings—such as the woman who was fond of tiger lilies and so wanted them carved on the façade and painted on the interior walls of her house. On the other hand there is "the woman who understands." This is what *she* has to say:

"No great architecture has ever expressed any one person's individuality. The English country house is rambling—because, unlike the American, the Englishman stays put—and the easiest way to take care of his constantly increasing family is to build on additions to his original castle. These great houses are national, not personal, and their appearance is determined and fixed by climate and service conditions and the landscape.

"The best dressed women do not make their own dresses and hats; they select them (if they can) from the artists' models. The greatest compliment that Worth or Paquin can pay any woman is to insist on designing gowns for her. They don't care what ugly women wear. The best hostesses certainly don't cook their own dishes. The greatest preacher wouldn't build his own church. Why American women should

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suppose that they can express what they feel—in bricks—has always amazed me—for it requires a highly specialized technique. They can feel a certain way—but how can they expect to translate it into architectural terms? If I could put what I feel into the piano, I would be a great Chopin player—but I can't. The beauty of the old architecture seems to be founded upon the fact that the ladies weren't consulted! It's what Kipling's old German said of the chimpanzee—there's too much ego in their cosmos. I suppose that's why I like the classic architecture so much—because it suppresses personality."

Having settled the question of style, and met the requirements of the number and kind of rooms, it becomes the endeavor of the architect to fit the owner's needs to the limited area prescribed by the adjacent lot lines and the building laws. Success, in this respect, is mainly a question of training, experience and ingenuity. The problems of light and ventilation are of paramount importance and are often difficult of solution. Almost every one is familiar with the dark, awkward and characterless, high stoop "brownstone front" house—with its narrow rooms and halls caused by the placing of the stair along one side of the house. A good plan for the modern town house has a central entrance, on a level with the sidewalk, flanked on either side by coat and toilet rooms

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and with the staircase and halls in the center, and a dining room in the rear, over the kitchen. A tradesmen's entrance usually gives access to the basement from a front area, with exterior steps, or from a street level door on one side of the main entrance with interior steps, leading down to the kitchen and servants' quarters. In the larger houses there is sometimes a sub-basement to contain the heating plant, coal, trunk room and miscellaneous storage. Thus the main rooms are given a maximum amount of light and air. The drawing room may then occupy the entire width of the front of the house, over the entrance, and a library the entire width across the rear, over the dining room. The bedrooms, single or in pairs, occupy similar positions on the floors above, leaving for the stairway, communicating halls, bathrooms, ventilating and light shafts, and closets, the central and darker part of the house, which may be more acceptably illuminated by electric light. In tall residences an elevator is often installed which may be operated by the occupant, by pressing a button indicating the floor at which it is desired to stop the car. Not as much attention has been given, as might be, to the utilization of the roof. This valuable and generally neglected area may be made into an attractive garden, or a safe playground for children, at comparatively small additional cost.

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More consideration than is customary should be given to the ultimate appearance of the exterior of a city house—for experience teaches us that the dust and grime of a few years' accumulation will completely cover the exposed surfaces with a drab patina. As a consequence of permitting soft coal to be burned within the city limits—or at least burned in a manner that only partly consumes it—a considerable amount of soot is carried up the smoke stacks and wafted to some resting place, destroying the beauty of most of our finest buildings. And the worst of it is that in an endeavor to clean these filthy façades, from time to time, by sand-blasting them, the character of the stone work is blasted away with the soot. It is a costly and disheartening situation and one that should be immediately corrected.

As every building in time is veiled in gray, a more bold and frequent use of color is desirable. I appreciate the delight which an architect may feel while inspecting and considering the use of colored terra cotta, brick and tile, from the samples submitted in those lovely shades of pastel blues and greens and ochres. But a cornice or frieze which exhibits on the day of erection the most exquisite refinement in combination of colors, will, within a year or two, be hidden under a cloak of ashen hue. More brilliant and daring colors are needed to offset the hoary shroud

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which so quickly envelops our urban architecture.

Economy in the planning of space, is, for obvious reasons, of the greatest importance in designing town houses. The relative importance of the rooms must be studied with especial care. Halls and corridors may be made narrower than in country houses, and the bedroom floors, particularly, should be arranged to give to the required number of rooms the greatest amount of needed space and the least amount of waste space. A heritage of our foremothers, happily dying out, is the "big roomy closet." In place of that extravagant and wasteful mania of our grandmothers for a closet big enough to dance a quadrille in, the much maligned "impractical architect" has devised a means of taking care of clothes and other wardrobe accessories within much smaller confines, which are much more easy of access, and the contents more readily seen.

No clothes closet need be deeper than two feet and it should be no longer than necessary to accommodate the required number of suits and gowns hung, as they should be, on hangers suspended from a pole extending lengthwise and supported by the end walls of the closet. Bureaus, as I have pointed out in an earlier chapter, should be eliminated in favor of the closet tills.

I realize that the suggestion to reduce wasteful

closet space may not be well received at first, especially by women. I have known cases where large closets had the next claim to a woman's affections after her children, her husband running a poor third. "They are so necessary (the closets) to keep things in"—is what the average woman says. But one of the curses of life is the habit of keeping things—especially things of no real value and which are rarely if ever used. Nine times out of ten the original cost of the cubic feet of a closet for storage purposes, plus the interest and up-keep charges, amounts to more than the stuff that is stored is worth. Unless things have a high money value, or unless they are used within a reasonable time, it is cheaper to sell them, or even to throw them away.

A good friend of mine, a well known decorator, wrote me in mock alarm as follows, relative to my suggestion to do away with the bureau:¹

"I read with quite some interest your article in last Sunday's *Herald*. If you carry your scheme any further, the decorator will hardly be needed at all, and if the clothing is to be put on shelves in closets, why not slip the tenants, too, into the closets, properly ventilated of course and equipped with cornhusk mattresses. The mind will then be free from wasteful cares, and the routine of the day will be confined to

¹ See page 63.

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rising from one closet, dressing in another, and sitting and eating at the kitchen table. But why have chairs and a table? The lower animals stand while they eat, and surely we can do as they. If, then, the house originally was to cost \$10,000 and you eliminate these items and discard the roof, why have walls, and the expense of windows and their draperies? In the end we will need but a shepherd's pipe, and a scrip, from which we may refresh ourselves with a little cheese and bread and a sip of goat's milk, which can be drawn directly from the original container. Here we have Arcadia, and what more could we want?"

My answer to Mr. Moran is that, as the bureau is as archaic as his shepherd's pipe and scrip, it should join them—in the museums.

Partitions, instead of being the customary six inches in width, may easily be reduced to two inches, using plaster blocks, or metal uprights furred and plastered or covered with sheetrock. The more compact floor plan, which brings city dwellers closer together (in blocks of houses) than in the roomier country, requires extra precautions to be taken to make the walls and partitions sound proof. Serious injury may be done to health and finances by neglecting this important feature. Only a few days ago a friend of mine sold his brownstone house because his

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nightly reading in the library was disturbed by the conscientious but persistent piano practice engaged in by his neighbor's daughter. And even in your own house, if you are a light sleeper, you may easily contract the veronal habit by periodical awakenings at the sound of syncopated snoring in an adjoining bedroom.

The question of ventilation is important, but it is too large a subject and too technical for a book of this kind and limitation. It is rarely considered and generally overlooked entirely. Fireplaces are the simplest ventilating medium, because they are generally wanted anyway, but they are not always of sufficient capacity, particularly in living rooms and dining rooms, where more than two or three people congregate. It is of course an added expense to install a ventilating system, but at least it should be discussed, because the client may feel that the health and comfort insured are worth the cost.

The present-day difficulties in securing capable servants who will stay put for a reasonable length of time has led to the need of catering to their wishes more than was customary a generation ago. In those days the quarters assigned to servants were not given much consideration and their comfort and convenience were not planned as carefully as they are to-day. In a city house, especially, the cook and the

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maid and the rest of them were allotted cramped, inconvenient and often unsanitary quarters. They ate their meals close to a hot coal range, in a dark and stuffy basement kitchen and were obliged to climb four or five steep flights of stairs to their bedrooms under the roof—which in summer time were no less torrid at night than the kitchen was in daytime. Often the laundry tub served them for bathing purposes and a grimy, ill-smelling toilet room, for their use, was tucked away in a dark corner of the cellar. The newer and better-planned houses of later days brought improvements and provided greater comforts for the denizens of “below stairs”—but the growing shortage of domestic labor became an acute problem, especially during the war, when it was well-nigh impossible to find or pay for the various kinds of service needed to take the proper care of a town house. These conditions, together with the steady encroachment of business in neighborhoods hitherto restricted to residences, the increasing street noises, the objectionable odors from automobile exhausts—the steadily increasing cost of land and building, and other reasons, too numerous to catalogue here, led to the sale of many city residences and to the migration of the city house dweller to the flat and apartment. Whether or not this was a jump from the frying pan into the fire remains to be seen. To

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quote Mr. Ruskin: "There is a sanctity in a good man's house which cannot be renewed in every tenement that rises on its ruins."

This move from the house to the flat did, certainly, release the householder from many cares and rid him of certain nuisances, but it has led to a radical change in the manner of living and it is at least a debatable question if the losses do not equal the gains. For the apartment house is more or less of a bee hive, and only those of the most expensive type have any of the privacy, individuality or charm which we associate with the home.

Most of them are built for purely mercenary purposes. There is one exception, however, the coöperative apartment house, in which each apartment is owned by its occupant. While families live one above the other, as well as side by side, they at least own their own homes, if they can be called homes, and have a voice in the management of the building, through a representative house committee.

The planning of such buildings requires exceptionally efficient service on the part of the architect, for the selling price of an apartment must compete with the prices obtained in other apartment houses, and consequently the relationship between cost and income must never be lost sight of. Great ingenuity is required in determining the most economical shape

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of the plan in relation to the plot, whether it should be square, or rectangular, or like the letters I, E, or H, etc., to secure the largest possible return on the investment.

Taking the "Culver Plan" coöperative apartment building as an example, and assuming an operation where the cost of the land and the building is \$960,000, the capital would be invested as follows:

A first mortgage on the land and building	\$370,000
Capital stock	590,000
	<hr/>
	\$960,000

The capital stock is then divided and apportioned among the various apartment owners on an equitable basis, and purchased by each according to the value of the apartment selected. The annual maintenance and operating cost are found to be \$61,945. This is also apportioned among the apartment owners, so that each shall bear and pay an equitable pro rata share thereof.

For example, Mr. Jones buys a five-room and bath apartment for which he pays \$13,800, receiving stock in that amount. Mr. Brown buys a nine-room and three-bath apartment, paying \$22,400 for it. And so on until the twenty-four apartments are purchased for a total of \$590,000. The annual maintenance

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charge paid by Mr. Jones—which includes 6 per cent interest on the \$370,000 first mortgage, the insurance, taxes, fuel, operating force, water, light, power, management, supplies and contingency fund—is his pro rata share of the total maintenance charge (\$61,945) or \$1440. Mr. Brown pays \$2350 a year, etc. If these maintenance charges are called proprietary rents, a comparison can be made with commercial rents. Thus, Mr. Jones's apartment would ordinarily be rented for \$3075. Consequently he saves annually \$807, after deducting \$828, the interest, at 6 per cent, which he would otherwise obtain on his capital of \$13,800. If he sublets his apartment at the commercial rental—he would have a net income of \$1635—or about 12 per cent on his investment. He may also sell his apartment if he is obliged to do so or desires to reap a profit. A few days ago a friend of mine, who paid \$65,000 for an apartment last year, refused an offer of \$80,000 for it.

It would seem therefore that if a person does not want a town house, but must live in the city, the most economical and satisfactory alternative is to buy an apartment instead of to rent one—for then he can secure, for permanent occupancy, the arrangement of the rooms and the style of interior architecture that he wants at a saving, or he can sublet his apartment or sell it, at a profit.

HE PRESENTS THE PROBLEM OF SEMI-DOMESTIC ARCHITECTURE

IN the category of semi-domestic architecture are such buildings as college fraternity houses, boarding schools, seminaries, clubhouses and the like. This type of building should bear a certain resemblance to a residence, but its architecture should also disclose its other uses. For example, a boarding school is the dwelling place of a large family composed of, say, twenty or more students, several teachers and one or more resident servants. It also contains study and classrooms, meeting rooms and other rooms of a character not found in the usual domicile. In attacking the problem of these semi-domestic houses the architect must be able to solve a number of intricate problems of mechanics and interior arrangement, and also to portray not only the domestic character of the building but its scholastic, mystic or other distinguishing characteristics. Out of compliment, let us consider the college fraternity house—for until now it seems to have received scarcely any consideration.

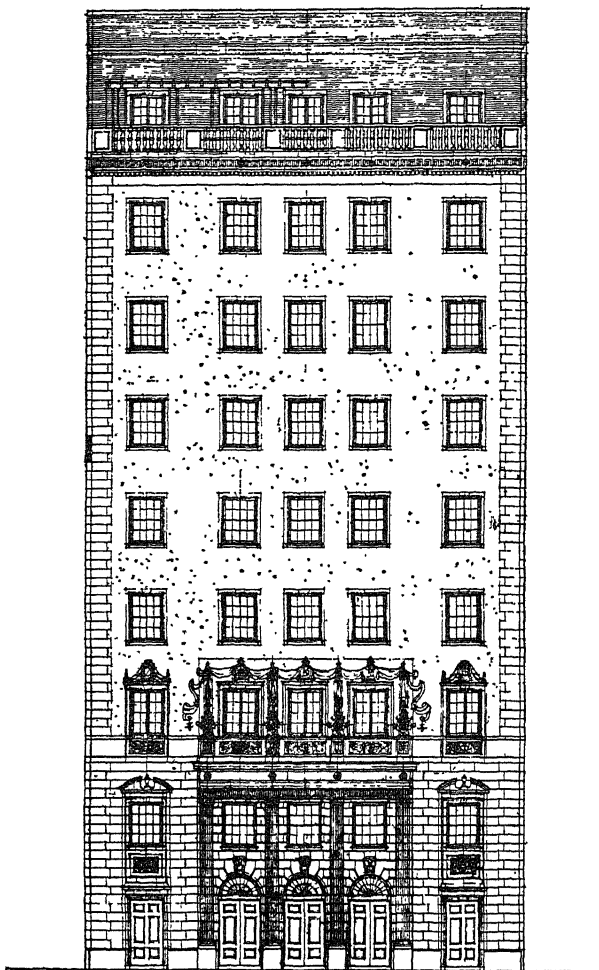
This phenomenon came to my notice some time ago and it possesses features of unusual interest both to the architect and to the college man who is ini-

SEMI-DOMESTIC ARCHITECTURE

tiated into a Greek letter fraternity. To be explicit, there is almost a total lack of expression of the character and ideals of these fraternities—in the architecture of their chapter houses. It would be more fitting, perhaps, and more accurate, if I limited this statement to the houses built or bought by my own fraternity, as I am naturally unacquainted with the rituals of our friendly rivals. At the same time, I may say that I have seen but few fraternity houses whose façades exhibit any distinctive characteristics other than those which are associated with residences or dormitories.

Architecture invariably expresses the habits and customs of a people and the conditions under which they live. For example, an era of great physical and intellectual perfection in the human race reigned in Greece, about 400 B.C., when the art of architecture reached its highest perfection. Consequently a Greek letter college fraternity, whose ideals are as lofty as current thought is capable of conceiving, may to-day consistently employ Greek architecture in America (modified to suit local conditions) in a building to be used as its chapter house and lodge. That is not to say, however, that it should be of Greek design if it forms a unit, or part, of the general plan of the college, when that happens to be Tudor.

ECONOMY IN HOME BUILDING



Proposed building for The Amateur Comedy Club. The first two stories indicate a theater, the third story club rooms, and the stories above apartments topped with a roof garden. Oswald C. Hering, architect.

SEMI-DOMESTIC ARCHITECTURE

When an architect is given the job of designing a church he generally evolves something that people who enter it, or walk by it, recognize as a place for religious worship. And the same is true, or should be true, of other characteristic buildings.

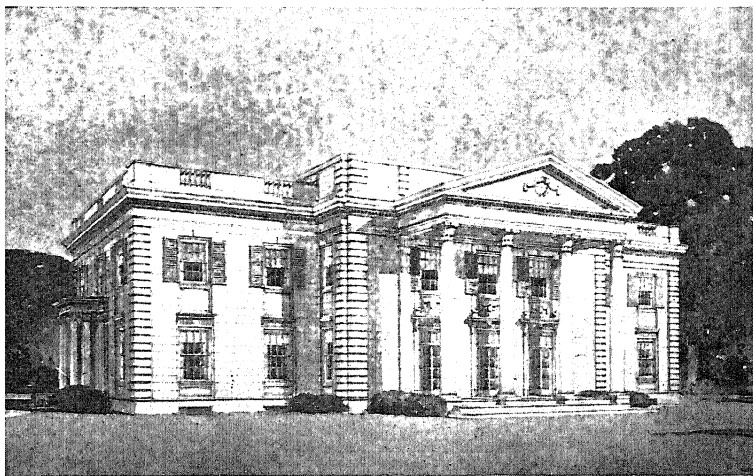
Why, then, has the architectural problem of the college fraternity been so generally overlooked, or ignored, by our architects? For, generally speaking, the best examples of architecture erected in the past twenty years are seen in America. I have not been in Paris for twelve years, but between the time I left the *École des Beaux Arts*, in 1899, and a brief visit in 1912, I saw there few new buildings that were worthy of praise. With the exception of the two exhibition buildings erected for the Exposition of 1900, the Grand and Petit Palais, and the Pont Alexandre Trois, there was nothing that had been done which could be dignified by the name of architecture. Similarly, in Rome, filled as that superb city is with the still glorious remains of an ancient art, to inspire the architect, the two newest edifices—at that time the Palace of Justice and the Victor Emanuel monument—may safely be ranked among the greatest architectural atrocities of the world. Where had the genius flown to that in the great school of architecture in Paris had, in my time, conceived such brilliant projects? Apparently it had

ECONOMY IN HOME BUILDING

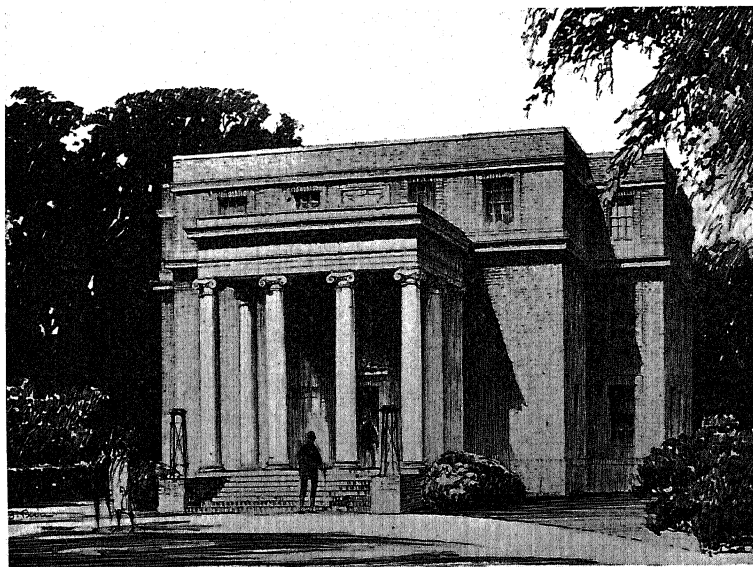
flown to America. For nowhere in the world, during the past decade, can there be found so many architectural masterpieces as have been wrought by American architects in their own country. And so, as I have said, it astonishes me that a field, so exclusively American, so absorbingly interesting, so fraught with wonderful possibilities and so stirring to the imagination as the Greek Letter Fraternity House, has apparently escaped the attention both of the laymen and architects of this country!

Most of the chapter houses of my fraternity, Delta Kappa Epsilon, have been bought—ready made. They were either city, suburban or country residences. It may be said as an excuse for the acquisition of such houses that there was not enough money at hand to build chapter houses of a suitable character, with individuality, that would fulfill the requirements. But with sufficient funds it is to be deplored that in some instances costly residences, lacking in character and good taste, and wholly out of keeping with the spirit and traditions of DKE, have been acquired by well-meaning, but ill-advised or thoughtless alumni; and where new houses have been built there is not a single instance that I know of in which the building committee has required, or its architect designed, a chapter house wholly in terms of DKE.

One of the cardinal principles of good architecture



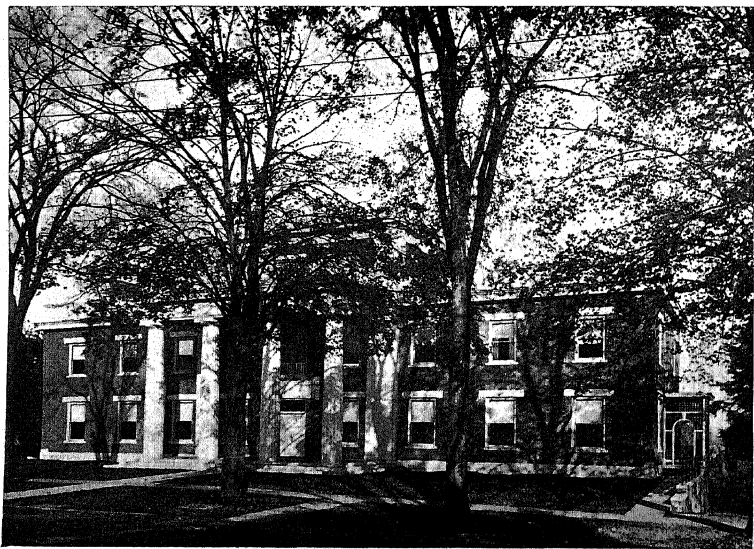
The residence of the Governor of a State should reflect both its official and its domestic character, and in Ohio it may properly suggest the traditions of its early settlers—the New Englanders. Oswald C. Hering, architect.



The architectural expression of a Greek letter fraternity house should combine the mystic with the domestic. Oswald C. Hering, architect.



A fraternity house, Henry Bacon, architect. In the text is a story about the windows of this building. Here, they are shown as Bacon designed them, each sash subdivided into eight lights by muntins. The picture which follows indicates how the building would have appeared if Bacon had complied with the wish of the "Building Committee"—that the window sash should have but one sheet of glass.



"Of all sad words of tongue or pen, the saddest are these . . ." What might have been if Bacon had not held out for the "integrity" of his design. Compare with the picture of the building as built—in which the window muntins were retained.

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is that the façade and plan shall express the purpose of the building in unmistakable terms, easily comprehended by people of average intelligence.

Let me illustrate by citing a few buildings, for example, in Washington, D. C. There is hardly a person of higher origin and education than a Fiji Islander who, standing before the Capitol, would fail to comprehend the meaning and purpose of that structure. The Capitol is *unmistakably a government building*. Likewise, the White House is *assuredly the residence of a high government official*. The Washington Monument *could mean nothing but a memorial* of some great personage or deed, nor could the Union Station *be anything but a railroad station*. Whoever has visited the Masonic Temple of Scottish Rites must have been deeply impressed with the beauty and dignity of this noble edifice, and no one could escape the consciousness that in this building occur the solemn rites of a secret order.

One of the first duties of building committees of future chapter houses is to consider the importance, nay, the necessity, of requiring the architect to design a house that shall have stamped upon its façade and impregnated in the interior atmosphere the unmistakable fact that it is the dwelling and meeting place of members of a secret and fraternal order.

To accomplish this requires little or no additional

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money over and above the sum needed to build a structurally sound and tastefully designed residence. It does require, however, the imagination and talent of an inspired architect.

Just consider for a moment what a truthful expression of the purpose of a fraternity house, in terms of architecture, will accomplish. One of the most poignant moments in your life, a moment when you are lifted into the seventh heaven of relief and joy, is when the bandage is removed from your eyes and the consciousness surges through you that, at last, you had been received into your fraternity.

Yet I have been present at initiations in a number of chapter houses—my own included—and with the exception of a few houses which have lodge rooms worthy of the name—what is it that greets the first glance around the room of the newly ordained Deke? Often it is the familiar form and appurtenances of the typical boarding-house parlor. And during four of the most formative years of this young Deke's life, when his tastes are mostly acquired, he is forced to live in surroundings that are generally no better than rooms in an ordinary lodging house. *To the commonplace environment that is the heritage of most young Americans* (and the lodging house is no worse, in this respect, than the house of the uncultivated *nouveau riche*) *is due in a large measure the*

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low average we Americans hold, among the nations of the world, in matters of taste in art and the understanding of it. Many Americans want good art—but few can pick it with any degree of assurance. We generally hire some one to do that for us.

The chapter house, intelligently designed and tastefully furnished, will do more than anything else to cultivate good taste in the undergraduate fraternity man, and, surrounded with the atmosphere created by appropriately designed rooms, he will be constantly inspired by the ever-present symbolism of his Fraternity.

The meetings and initiations would be a hundred times more impressive if they were held in a room with an atmosphere of privacy, dignity and mysticism, instead of in the front parlor—the usual meeting room of some of our houses. This room, as a rule, has little privacy and with its miscellaneous collection of commonplace furniture, department-store bric-à-brac, and hand-painted photographs is anything but inspiring.

It should be borne in mind, in building chapter houses, that any scheme which provides ultra conveniences and luxurious appointments cannot be too strongly condemned. *To accustom a young man, who has lived in surroundings of a modest character, to a life of ease and affluence, and then turn him*

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out at the end of four years, with the prospect of living in a hall bedroom of a rooming house—is nothing less than cruelty. More harm than good is done, not only to the individual, but to the character and reputation of the chapter, in providing a setting that invites a soft and easy-going college life. A logical consequence will be that the young occupants are either spoiled, or that they are taxed for the upkeep to such an extent that only rich men's sons may enjoy its privileges. *This is wholly foreign and contrary to the underlying democratic character of most fraternities.*

I sincerely hope that before our fraternity alumni engage in any further house-building projects they will seriously consider the need of giving the stamp of good taste, character and individuality to the proposed homes of their younger brothers, recognizing the importance of the influence upon them of a proper environment, which should be neither commonplace nor cheap, vulgarly ostentatious, nor over-luxurious. Every such building should, if possible, be fireproof, of sound and durable construction, equipped with reasonable time-saving, money-saving and health-insuring conveniences. Its decorations should be simple and in good taste, using, for example, flat-covered stenciled surfaces, rather than elaborate plastic ornament in relief. The furniture

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should be substantial and comfortable and the general atmosphere one of quiet, dignified refinement, with a touch of the mystic that will inspire in the neophyte a respect bordering upon reverence for his college home and be a magnet that will draw him back to his Alma Mater by the irresistible forces of pride and satisfaction.

No architecture could be more appropriate for a Greek Letter Fraternity House than the architecture of ancient Greece. But where the college authorities have already an established plan in a certain style it may be necessary to conform to that style. For example, if a quadrangle of dormitories and fraternity houses has already been started in the Colonial or Tudor style (the architecture most commonly used for the new college buildings in America) the design for the fraternity houses must necessarily harmonize with the style already adopted. A fraternity house can be made to portray its purpose in any style of architecture, although greater ingenuity on the part of the designer may be required to interpret it, for instance, in the Tudor style than in the Greek style.

Especial care and consideration should be given in planning a fraternity house to have it compact, with a minimum of waste space and other extravagances, for the money which builds these houses is usually

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secured by passing around the hat among the alumni. In the building pictured, two notable economies have been secured by the substitution of sheetrock for plaster, and by providing two fully equipped closets for each of the combination study and dressing rooms, thus eliminating the need of two bureaus in each of these rooms and saving the cost of the space they would occupy. The men sleep in the cubicles on the top floor, bathe in the wash rooms and then go to their studies—which are also their dressing rooms. Each dressing-room closet is equipped on one side with a series of superimposed tills, which hold more than the contents of a bureau and allow the articles of the wearer to be kept separate and always in view. On the other side of the closet is a rod with hangers for clothes. A full-length mirror on the inside of the door completes the equipment.

The dormitory system of sleeping quarters, the study and adjacent bedroom arrangement and the combination bedroom and study all have their enthusiastic supporters, although the last named is the least popular. There are many arguments in favor of the dormitory, especially when it is divided into cubicles. And these arguments often begin and end with the evidence that the dormitory plan costs about a third less than the study and adjacent bedroom plan.

The dormitory system came to us from the Eng-

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lish schools. It has the advantage not only of securing a great saving in space—and consequently in cost (four men can be accommodated in a dormitory in the same space that is taken by two men in a bedroom)—but the dormitory insures better health of the occupants, since the larger room contains a greater volume of air and more windows—guaranteeing better ventilation. The dormitory tends to raise the standard of scholarship—for it is difficult for several boys to sleep and study in one room or in adjoining rooms without interruption. When the dormitory is on one floor and the study room on the other, regular sleeping and study hours can be maintained without disturbance. Discipline and general morality are improved with the dormitory system. When a couple of boys can lock themselves in a bedroom, they can drink, gamble and deport themselves in ways they would not venture to do in public. In a dormitory every one becomes more or less acquainted with the conduct of his mates and if a man gets drunk night after night, or stays out all night, it is known not only to his roommate but to practically every one in the chapter. This deters men from wrongdoing, for there are always a number of men who have a sense of obligation to others, and the seniors, in particular, are able, in a dormitory system, to keep an eye on their younger brothers

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and help them when they show an inclination to stray from the beaten path. The dormitory system has a further beneficial effect on the men. It is democratic. It puts all men on the same level and each one gets acquainted with the other, which is not always possible when the men live, study, and pass their time in separate rooms on different floors.

The objections sometimes raised to the dormitory are the natural hesitation to adopt a new plan unlike that which may exist in other houses. For in social matters college boys are the most conservative creatures in the world. Often, too, the seniors do not like to be put on the same level with the freshmen. And finally all men desire privacy to a certain extent and some are so constituted that they always like to be alone, except when it is necessary to mingle with the crowd, as at meal times and at meetings. But with the dormitory divided into cubicles, and with separate study rooms to accommodate one, two, or more men, as agreed, most of these objections are overcome.

The perspective is purposely shown almost in a full front view, so that the entrance portico and the tripods, flanked by unbroken walls, should stress the Greek motif and the mystery. The other three façades are liberally punctured with windows, stress-

SEMI-DOMESTIC ARCHITECTURE

ing the domestic character of the building which could be still further accentuated by window blinds.

The tripods, on either side of the entrance, are intended, upon nights of initiation, banquet, or important occasions, to be filled with oil, and lighted, as an indication that a special event is transpiring within.

Sometimes it is desired to provide a city habitation for a club, when there is not enough money available for the purchase of a suitable site and the erection of a building—for that purpose alone. A satisfactory solution of such a problem may be found by erecting a commercial building, in which the club occupies the space it requires and sells or rents the balance for other purposes. The architecture of such a building should disclose this condition. An example is shown in the drawing for the Amateur Comedy Club. In this building the three lower floors are occupied by a theater, a ballroom and clubrooms, and above are six floors of apartments, topped with a roof-garden. The façade plainly indicates these differentiations, as illustrated on page 186.

The Ely School, the terrace of which is shown on page 121, is a spacious, sunny, well-built and well-equipped building of good design and proportions. Because of their faith in the power of beauty as an

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educating force, the owners have given attention to the creation of surroundings that will develop good taste in the pupils.

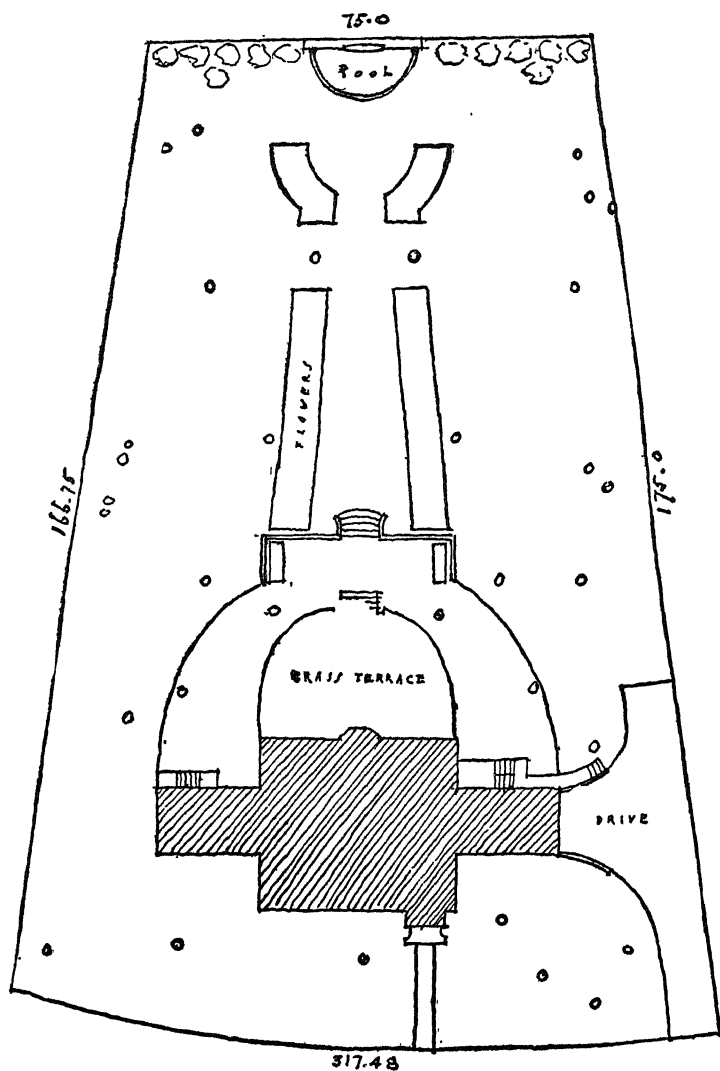
This, after all, should be the prime object of all architecture—to uplift and inspire.

HE BUILDS A MONUMENT TO YOU AND MERITS YOUR THANKS

THERE is comparatively slight recognition given to architects for the work they do, as compared to men of other professions in the fine arts. Why should this be so? Surely the architect contributes to the lasting good of the world approximately as much as the painter, the poet, the sculptor, and the musician. Yet in a large majority of cases, where public attention is called to a building, the architect's name is rarely mentioned. If it is a new building—the name of the owner or the corporation, who supplied the money to build it is first mentioned. Next in order comes the realtor, who “negotiated the deal,” then the contractor and sometimes the names of the people who supplied the steel and the plumbing fixtures. But the architect who conceived and solved the problem—who is he?

How often is a book advertised without the accompanying name of the author—or a painting or a sculpture without the name of the artist? Rarely—if ever. And operas and symphonies—are not their composers almost as well known as the compositions? Why should the architect be so backward in coming

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The architect always has a complete picture in his mind of the house inside and outside. Here he suggested the garden treatment. Oswald C. Hering architect.

HE MERITS YOUR THANKS

forward? If the public was made as well acquainted with Bacon as it is with Sargent and MacMonnies and MacDowell, there would be a greater interest taken in architecture in America—and consequently a greater stimulus and achievement. To start the ball rolling, and for the benefit of readers not already apprised of the fact, the “Bacon” mentioned above is Henry Bacon, architect of the Lincoln Memorial, in Washington, D. C., one of the greatest masterpieces of architecture in the world. Royal Cortissoz, in a eulogy of Bacon, tells the following anecdote that should be read and digested by every one who contemplates building and who is about to engage an architect.

“If I had to characterize Bacon in two words I would call him an embodied conscience. A homely little story that came to me not long ago will enforce the point. It was told to me by the president of a university where Bacon was asked to design a fraternity house. He made the plans, and when the committee was through poring over them they said they wanted big, plate glass windows. The plan called for small panes, and these, the committee said, would have to be changed. Bacon said, ‘It is necessary to the integrity of my design that the panes should be small. If you must have them large, the affair is very simple. Give me back my plans, em-

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ploy some one else, and we'll call that little matter settled.' The panes went in small."

You see it is not a little matter, after all. Nothing has ever been a little matter with Bacon, nothing that touches the honor of his art. He has built many buildings, studying all manner of problems. He has designed bank buildings and university dormitories, libraries and hospitals, churches and schoolhouses, a railway station and an astronomical observatory, a public bath and a bridge. In collaboration with our leading sculptors, with the late Augustus Saint-Gaudens, and with Daniel C. French, he has designed perhaps three-score monuments. And in everything he has done he has been that embodied conscience of which I have spoken, seeking perfection. How nobly he could grasp it the Lincoln Memorial shows us.

There never was a more profoundly considered design. That building was studied and re-studied, and re-studied again. Its smallest detail, as well as its mass, represents ceaseless meditation. And here I would emphasize once more the man behind the building. What is the style of the Lincoln Memorial? A natural reply would be: "The style of ancient Greece."¹ But for my own part I would prefer to call it "the style of Henry Bacon."

¹ After the manuscript of this book had been delivered to my pub-

HE MERITS YOUR THANKS

"I cannot but think it an evil sign of a people when their houses are built to last for one generation only." Thus wrote John Ruskin in "The Seven Lamps of Architecture." And he goes on to say that houses should be built with such differences as might suit and express each man's character and occupation, and partly his history. "This right over the house, I conceive, belongs to its first builder, and is to be respected by his children."

I wish that Ruskin was right. But if he is—his theory constitutes a libel of the American character—and I cannot subscribe to that. I prefer to believe that America has not yet reached the period in her evolution where her people may settle down permanently in any one spot. America is still too young. She is still growing, experimenting, adventuring. Her melting pot has not yet produced a pure American type. Until then it is futile to expect an American style of architecture, and to urge permanence

lishers, I told Bacon that I had included Cortissoz's story about the fraternity house, and asked him if he would give me a photograph for reproduction in the book. He said he would and wrote a memorandum to the effect on a slip of paper, which he placed in his pocket. That was the last time I saw him. A few days later he died. I had long regarded him as the world's greatest architect, and his untimely death at the age of 58 is in the nature of a calamity. I shall always find pleasure in recalling that on two occasions he sent his clients to me when he was unable to attend to their wishes, and took the trouble and interest to come to my office to inspect and approve of the drawings. A towering genius, he possessed the modesty, the gentleness, the courtesy and the thoughtfulness that are instinctive with the truly great. I thank my publishers for their permission to subscribe here an inadequate but sincere tribute to the artist and friend who has been so great a source of inspiration to me.

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except as an insurance against destruction and financial loss by fire. The great and beautiful homes of England and France and Italy were built to conserve and hand down the family traditions from generation to generation. The eldest son received the heritage and he was able to continue to live in his ancestral home because the family fortune descended to him and because he generally trod more or less in the footsteps of his father. But in America these customs do not obtain. The eldest son more often than not inherits a portion only of his parents' wealth. He frequently engages in a different business or profession from that which his father practiced, and his calling often takes him far from the home in which he was born. And because of the American custom of a more equal division of the estate among the children, the eldest son can rarely afford to reside in, or keep up, the ancestral home, even if he wished to. Consequently the average American is forced by economic conditions to build with an eye to the future sale of his home—for if he indulges himself in a style of architecture and a sequence of rooms which reflect his habits and his personality too strongly, and he expends large sums of money to build a house that embodies too markedly either his eccentricities, or what he may imagine are indelible family characteristics, under the delusion that he is preserving

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family tradition by founding a permanent estate, he will probably deprive his children of a large portion of their material inheritance. For nine times out of ten—"family traditions" notwithstanding—his dead body will scarcely be cold before the "ancestral home" will be placed upon the market and sold at an appreciable loss, and, except in rare cases, the proceeds, divided among his children, will be a comparatively small sum per capita. I do not wish to be understood as decrying the building of permanent homes—but as advocating homes built within reason and to accord with our national life.

It is wise only to build for posterity in the broader sense—the posterity of America. Use durable material. Build fireproof buildings, if possible. But design them in a manner that they will appeal to your neighbor, to the visitor and to the passerby. Then when the time comes, if necessary, they can be sold—not at a disheartening loss—but often at a profit. A long line of ancestors from New and Old England bred in me a deep desire for a permanent home. But it was not strong enough, when I was a young man, to enable me to resist the temptation to take a profit of 40 per cent. by the sale of the first home I built. If I were to build a home again I should build for permanency, and in the hope that it might continue to be the home of my son I should

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build in an attractive New York suburb, or in one of several delightful spots within the city limits where there is an abundance of light and air and an interesting outlook, and I should design a house to suit modern conditions of life and make it not too large or too costly, but endow it with a compelling charm in the hope that my son's vocation might enable him to continue to live in it—or, if not, to sell it readily, and without suffering a financial loss.

It is less painful and perhaps less expensive to adopt a child than to breed and nurse one of your own. But it isn't as pleasant or as interesting. By the same token people who buy ready made houses, or rent them, may acquire immediate shelter, at a comparatively small first cost, but they know nothing of the joy of the evenings spent in drawing those serio-comic plans and then watching their own creation develop, as if by magic, under the skilled hand of the architect, into something real and beautiful, rising from the ground, growing tall, and acquiring charm and distinction with age and ultimately earning the applause and respect of neighbors and visitors.

"Does an architect pay you?" is a question I overheard one commuter put to another. Of course he does. The architect pays the owner every time. A good architect pays his client with services, that are

HE MERITS YOUR THANKS

sometimes priceless. He may give him a home of such charm and beauty and comfort as to insure a life of happiness and contentment. Who dares appraise such a gift in terms of dollars? Without an architect a man can build only from a picture he finds in a magazine, or in one of the books entitled—"A hundred plans of distinctive houses costing from five to fifty thousand dollars." It will probably cost him, to build it himself with the aid (?) of a builder, about twice as much as the book tells him. Good houses cannot be built that way. In a recent issue of "Country Life," a note, composed by the editors of that magazine, is printed in conspicuous type at the head of an article written about the part which an architect plays in planning the home. It reads:

TO BUILD a house whether small or large, without an architect is to court disaster. You don't hesitate to engage a lawyer to handle your legal problems nor are you reluctant to rely on the doctor when you are ill. They are specialists in their lines just as an architect is in his. The employment of an architect is the best form of insurance one can buy.

THE END

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